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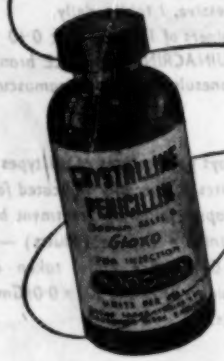

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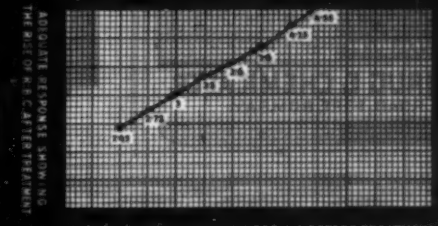

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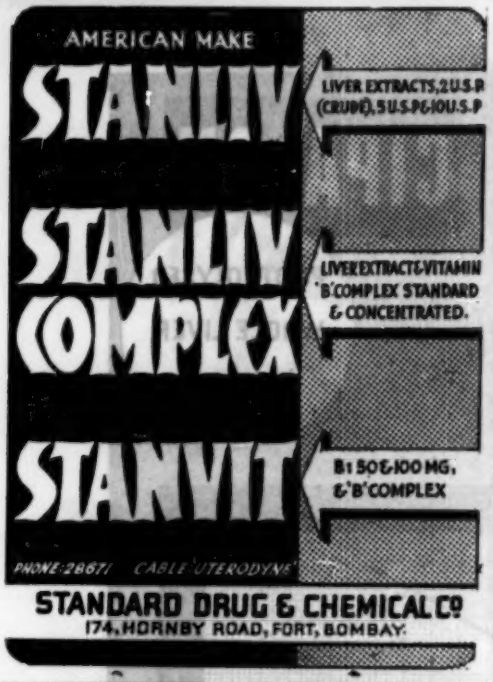
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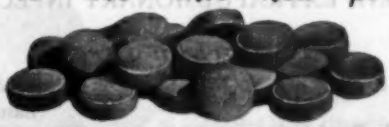

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(1) *Preliminary statement by the Medical Research Council, Lancet,* 1949, *i*, 1237. (2) *MORSCHLIN, S. & DEMIERAL, B. Schweiz. Med. Wschr.* 1950. *80*, 978

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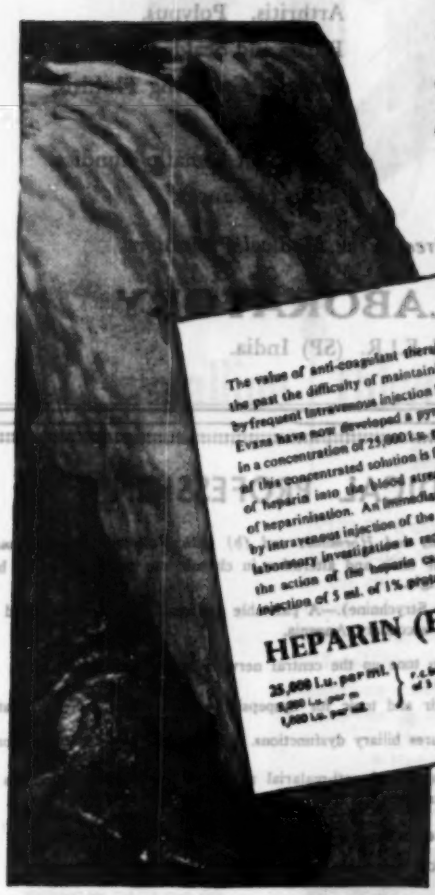

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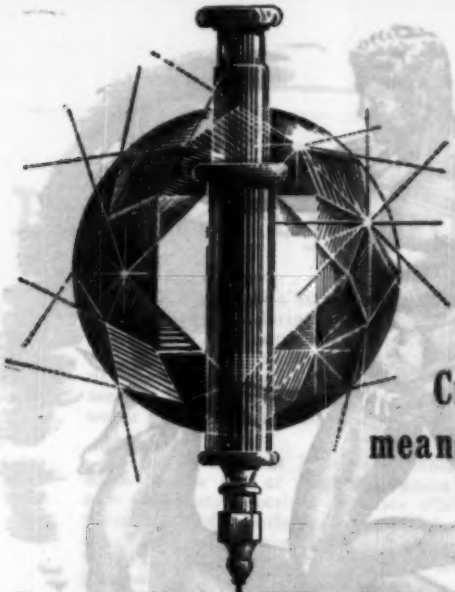

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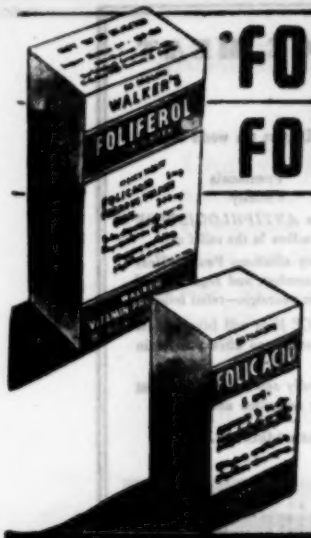

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EXFOLIATIVE CYTOLOGY IN DIAGNOSIS OF CANCER

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In recent years the diagnosis of malignant lesions by cytologic studies of exfoliated cells in fluids and secretions from body cavities has received increasing recognition by the pathologists. Although sporadic reports of finding tumour cells in body fluids have appeared over a period of many years, the pathologists have continued to rely upon patterns of growth in tissue rather than the appearance of individual cells for diagnosis. Diagnosis based on exfoliated cells without the aid of tissue relationship had not been favoured.

The demonstration of the feasibility of the recognition of the detached cells of uterine cancer in vaginal smear by Papanicolaou in 1928 has given a stimulus to this method of approach. The value of this technique has been demonstrated by Papanicolaou and Traut (1943) in a beautifully illustrated monograph wherein they showed the procedure to be highly reliable in a series of 3,014 patients. Since then there has been a renewal of interest in cytologic methods of cancer diagnosis. Fluids from a variety of sources have been studied by an increasing number of workers using Papanicolaou's method or various modifications. Published work now indicates that cytologic diagnosis of exfoliated cells is highly reliable and has come to stay. Gates and Warren (1947) have claimed its accuracy equalling that of biopsy in cases of uterine cancer. To date, perhaps the greatest accuracy has been achieved in the diagnosis of cancer of the uterus (96 to 99·7 per cent) (Meigs *et al*, 1945; Papanicolaou and Traut, 1943) and pulmonary cancer (82·4 to 96·6 per cent) (Herbut and Clerf, 1946). The evaluation of the status of cytologic diagnosis of cancer by a conference (Cancer News, 1948) of 61 pathologists and clinicians called for the purpose by the American Cancer Society in 1948, could be considered as summing up its present position. It was concluded that the 'value of the cytologic method was established in some fields and that investigation of its usefulness in other fields could be continued.'

It is generally agreed that results obtained in the treatment of cancer are unsatisfactory. These poor results are due in large measure to the fact that for the most part, the clinicians have to depend for diagnosis of malignancy upon the signs and symptoms which may not become evident until the disease is far advanced. It is partly due to reluctance of the patient to submit to operative diagnostic procedure, *e.g.*, diagnostic curettage in cases of uterine cancer; and partly to the lack of facilities for bronchoscopy, gastroscopy, cystoscopy and specialised roentgenography in most of our hospitals. For these reasons, any diagnostic procedure which will enable the pathologist to make an early diagnosis of carcinoma is worthy of serious consideration.

The study of exfoliative cytology has provided the pathologists with such a weapon.

Literature

Cytologic diagnosis of uterine cancer—Papanicolaou's (1946) investigations of desquamated epithelium began in 1917 with the study of morphologic and cyclic variations in the cells in the vagina of guinea pigs, and he applied this technique to the diagnosis of human cancer in 1923. The results of these studies were published by him in 1928 and 1933. Despite this early recognition of the fact that malignant tumours of the uterus could be diagnosed by vaginal smear test, the clinicians failed to realise the potentialities of this diagnostic method. It was only after the publication of the monograph of Papanicolaou and Traut (1943) that the interest in this new approach to cancer diagnosis was revived.

Meigs, Fremont-Smith, Graham and co-workers (1943) of the Harvard Medical School were the first to conduct a thorough investigation of the test. In 1943 they published the report of 220 cases with an error of 2·2 per cent in cervical cancer, and 8·3 per cent in endometrial carcinoma. The false positive was 2·6 per cent. These figures run closely to 9·3 per cent error in fundus cancers and 1·6 per cent in cervical cancers as reported by Papanicolaou and Traut (*loc. cit.*) These authors reported no false positives in their series. Ayer (1944) reported that 95 per cent of 40 patients with carcinoma of the uterus showed tumour cells in the vaginal smear.

Fremont-Smith *et al* (1945); Jones, Neusteadter and Mackenzie (1945); and Ayer, Baul and Kearns (1945) confirmed Papanicolaou's findings. Same year Gates and Warren (1947) reported upon 341 vaginal

smears from 233 women and opined that this procedure was promising in a high degree, especially as a screening test for detecting the existence of cervical and endometrial cancers in large group of women. Meigs *et al* (1945) published a complete report on 185 cases with an error of 4 per cent.

Ayer and Dakin (1946) described the glycerine mailing technic of vaginal smears which has proved a very practical method for getting specimens from outside. Ayer (1946a and 1946b) reviewed observations on 2320 gynæcological cases which included 202 cases of genital cancers diagnosed by cytology and confirmed by biopsy. He concluded that smears taken directly from the os of cervix were more informative than those taken from vagina, as they were undiluted by vaginal secretion and were aspirated from squamo-columnar junction, the area of epidermoid carcinoma.

Meigs (1947) reported 2,749 cases with an error of 3·2 per cent, and agreed with Ayer (1946a and 1946b) that in some cases cervical smear may be of greater value than vaginal smear. At this time Ayer (1947a) reported the usefulness of 'spatula cytology technic' or 'surface biopsy method' after a study of 3,000 cases. After study of 150 cases by vaginal technic and 50 cases by spatula technic, he (1947b) came to the conclusion that spatula technic was invaluable in the diagnosis of microscopic carcinoma, as the cells from squamo-columnar junction may be scraped by this method before the lesion becomes exfoliative. A noteworthy contribution to our knowledge of vaginal cytoloyy at this time was the publication of 'Handbook for the diagnosis of cancer of uterus by the use of vaginal smears' by Gates and Warren (1943).

Graham (1947) reported the cellular changes in vaginal smears in cases of carcinoma of cervix treated with x-ray or radium. In 1948 he reported the diagnostic accuracy of first vaginal smears as 91 per cent compared to 90 per cent of first biopsy report in 181 cases of epidermoid carcinoma of cervix. By a combination of the two methods the correct diagnosis was obtained in 99 per cent cases. He came to the conclusion that vaginal smear was more accurate than biopsy in the diagnosis of early cancer of the cervix. Ayer (1948) also reported the superiority of smears over single biopsy, but he advocated the selective scraping by spatula. Papanicolaou (1949) gave the statistical evaluation of 3,195 cases at the Kate Depew Strang Cancer Prevention Clinic. This revealed a lower incidence of uterine cancer, a total of 10 (0·3 per cent), as proved by biopsy. In this series there were no false negative reports and only one false-positive (0·3 per cent). The results with adenocarcinoma of endometrium or of cervix are much better than previously reported. In his series of 901 cases of adenocarcinoma of endometrium and cervix, there were 9 cases of endometrial carcinoma and 2 cases of cervical adenocarcinoma. All were diagnosed correctly by smear examination. In the same year Brown (1949) after study of 5,314 smears from cases over 30 years of age urged that all women seeking medical care be given the benefit of routine vaginal examination and hoped that this will not only improve the results of routine examinations but will help in selection of patients for biopsy.

Carcinoma cells in sputum and bronchial secretion—Much has been published on the studies of sputum smears since the first report of the cytological examination of sputum in a case of bronchogenic carcinoma by Hamplen in 1887. Dudgeon and Wrigley (1935) reported a new technic of sputum examination. This consisted initially in making the films of fresh sputum, fixing while wet in Schaudinn's solution and staining with hemotoxylin and eosin. By this method they demonstrated cancer cells in 68 per cent of 58 proved cases of carcinoma of the lung or respiratory tract. With similar technic, Barrett (1938) reported positive results in 68 of 110 proved cases of bronchogenic carcinoma and Gowar (1947) obtained positive reports in 64 per cent of 93 cases in which sputum was investigated.

Wandall (1944) presented a thorough study of 250 patients of whom 100 had primary bronchogenic carcinoma. He found cancer cells in 82 of these 100 cases. Biopsy gave positive results in 55 per cent. The sputum examination in his group gave higher percentage of positives. Combining both these methods, Wandall found that a positive diagnosis of carcinoma could be made in 94 per cent cases.

Papanicolaou (1946) has reported results of sputum examination in 54 cases. Out of these 22 were reported as positive for cancer on the basis of smears. In 18 of these (82 per cent) the smear diagnosis was confirmed by biopsy or exploratory thoracotomy and in the remaining 4 (18 per cent) by x-ray and other clinical methods. No false reports were given in this series. Woolner and McDonald (1947, 1949a,b,c) have made extensive investigations and reported the results in a series of papers. They fix the smears while wet, in alcohol-ether mixture and stain with Harris hematoxylin using dilute eosin as counterstain. In a series of 150 cases in which the smears were diagnosed positive for cancer cells, they found 96·6 per cent as confirmed positive.

Hunter and Richardson (1947) have emphasised the advantages of blocking and sectioning the bronchial secretions obtained by bronchoscopy. The sections were stained with Papanicolaou stain. Cross *et al* (1949) have also recently reported good results, with fixation, embedding, and sectioning of the aspirated material. They used hematoxylin and eosin stain.

Interesting observations have been made by Appeal and Bronk (1949) in experimentally produced pulmonary carcinoma in rabbits. They studied bronchial secretion in these and found 58 per cent positive smears before tumours were grossly recognisable by x-ray or bronchoscopy.

Pleural and Peritoneal Fluids—Attempts at diagnosis of cancer from the study of smears of ascitic fluid date back to the middle of last century (Ehrlich, Lucke and Klebs, Quincke, Schmorl all quoted by Saphir). Zemansky made a comprehensive review of all investigative work till date and concluded that examination of pleural and peritoneal fluids for tumour cells was a valuable routine laboratory procedure.

Papanicolaou (1946) applied his technic of vaginal smear examination to these fluids and recommended that the fluid be mixed with 95 per cent alcohol, half and half, as soon as collected and then centrifuged at moderate speed for 30 minutes. The supernatant fluid is thrown and sediment is smeared on slides, fixed in ether and alcohol and stained. Hunter and Richardson (1947) suggested a useful modification of Papanicolaou technic. They advised precipitating the proteins from fluid with picric acid, filtration, embedding in paraffin section and staining with Papanicolaou stain. This method was found more useful because (1) there is concentration of cells, (2) there is location of all cells in the same field, and (3) groups of cells are not torn apart.

Saphir (1949) reported 37 positive cases of pleural or peritoneal carcinoma in 175 cases examined by smear technic. Sattenspiel (1949) used modifications of Papanicolaou technic with more satisfactory results. These were as follows (*i*) collection of effusion and immediate centrifuging without mixing with alcohol (*ii*) direct smear of any coagulum in the fluid, (*iii*) refrigeration alone if immediate examination is not feasible, and (*iv*) addition of acetic acid to bloody fluid.

Gastric and Duodenal aspirates—The results of some recent studies of gastric fluids with respect to accuracy of cytologic diagnosis of cancer are shown by Richardson, Queen and Bishop (1949). Frishman and Gorin (cited by Richardson, Queen and Bishop—Ref. Papanicolaou, 1945) examined mostly unstained gastric sediment and reported 44·4 per cent positive results. Tomenius's (1947) study was directed towards determining of the relative occurrence of cell types found in gastric juice or fluid aspirated from normal stomach and in the more common pathologic conditions. After washing the stomach, he introduced buffered sodium bicarbonate solution, which was withdrawn in ten minute fractions through a special instrument containing four channels, through which secretions from the esophagus, stomach and duodenum could be separately obtained. The relative occurrence of 11 different types of cells was determined on air-dried, alcohol fixed, modified Giemsa stained specimens of the sediment. His procedure was complicated and not suited for diagnostic purposes.

Papanicolaou and Cooper (1947) recognised cancer by smear examination in 37 per cent of 137 cases, false negatives being 37 per cent, while there were no false positives. Graham, Ulfelder and Green (1948) found 62·5 per cent positive in cancer cases, while Block and Bryant (1948) reported positive in 50 to 60 per cent of cancer cases.

Cytologic examination of Urine by Sediment—Papanicolaou and Marshall (1945) recovered and recognised cells or fragments of desquamated growths of the male and female urinary tract in the sediment of centrifuged urine. They found 27 positive in 85 cases, and of these 24 were confirmed by biopsy. Later they reported that the diagnosis of carcinoma of bladder, prostate, kidney and sarcoma of bladder was done pathologically in 87·5 per cent cases. They concluded that the smear technic promises to be of unique value in following the results of various treatments or of carcinoma of the urinary tract.

Daut and McDonald (1947) emphasised the diagnosis of the malignant lesions of the urinary tract by means of microscopic examination of the centrifuged urinary sediment. Ludden and McDonald (1947) reported the diagnosis of tumour of the kidney by cytologic investigations of the urinary sediment.

Cytologic examination of Prostatic secretion—Study of the prostatic secretions has been done by various workers. Mulholland (1931) studied prostatic secretion in relation to malignancy. Herbut and Lubin (1947) reported 17 cases of carcinoma of the prostate encountered in 100 consecutive patients. Herbut (1947) examined secretions from 480 patients and could diagnose cancer in 54 of 66 cases (81·8 per cent) of clinically or histologically proved cancer.

Cytologic examination of Rectal discharges—Various studies (Anderson, 1921; Callender cited by Wisseman, Lemon & Lawrence, 1947; Haughwout, 1924) have appeared with special reference to this problem, describing the cytology of stained and unstained preparations in considerable detail. Bercovitz (1940) made study of cytology of the rectal discharges after saline purges in normal and variety of abnormal conditions.

Wisseman, Lemon and Lawrence (1947) published the preliminary report on the diagnosis of malignant lesions of the rectum and sigmoid colon by cytologic studies of exfoliated cells. They found only one reference of Altganzan (quoted by Wisseman, Lemon and Lawrence) reporting the use of fresh smears, taken at proctoscopy for the diagnosis of malignancy. In his report very little definite information was available on the criteria used by him or the results obtained. Since that time Hunter and Richardson (1947) have mentioned the use of cell blocks and smears of rectal discharges for this purpose.

Wisseman, Lemon and Lawrence (1949) prepared the patients for sigmoidoscopy with cleansing saline enema, collected the material on cotton swabs during the examination, smeared it on glass slides immediately and fixed in chilled acetone before drying and stained it by Papanicolaou's technic. He diagnosed 67 per cent accurate malignancies by sigmoidoscopic examination, 76 per cent by x-ray and 76 per cent cytologically.

Objectives of the Present Study

This paper presents a preliminary report on the results obtained from smear examination from various sources in the laboratory for cytologic examination of carcinoma in the Sarojini Naidu Hospital, Agra, during last one year.

The problems involved in this study were fourfold: (*i*) to become familiar with the appearance of cancer cells in various body secretions and fluids, as well as normal cells in all their variations; (*ii*) to become familiar with the appearance of cells in vaginal smears during various phases of menstrual, cycle and to study the cell type in ovulatory and anovulatory cycles with a view to differentiate primary from secondary sterility; (*iii*) to standardise technical details

of collecting, smearing, fixation and staining as well as mailing the specimens, and (*iv*) to evaluate the method as a routine procedure to be used in diagnosis of carcinoma of the internal viscera.

An attempt has been made to correlate the smear diagnosis with histopathological diagnosis of the biopsy specimens.

Success hinges on several factors: an adequate sample of secretion, proper technical preparation and experience in diagnosis. One of us (P.N.W.) worked in the laboratory of George Papanicolaou in Cornell University and with Shields Warren in Boston, and thus had the opportunity to learn the technic and interpretation of smears from those responsible for establishing this method on sound and accepted basis. It is hoped that this laboratory will form the nucleus of a provincial tumour diagnostic service.

Material and Methods

The material for the present study came from the out-patient department and the wards of the various sections of the Sarojini Naidu Hospital Agra, Lady Lyall Hospital, Agra, and the Dufferin Hospital, Meerut. Each case is examined and the relevant history and physical findings are noted on special requisition forms. Specimens are taken for biopsy wherever possible. The smears are stained and studied in the laboratory for cytological diagnosis of carcinoma in the Department of Pathology. The final diagnosis on both the smears and sections were given by one of us (P.N.W.).

Preparation of Smears

Vaginal, Cervical and Endometrial secretions—Vaginal smear—It is preferable that the patient shall not have douched during the 24 hour period prior to the collection of the vaginal secretion. The patient is placed upon an examining table in the lithotomy position. The labia are separated and the rubber bulb of the glass pipette (slightly curved, 6 inches in length, 0·5 cm. in diameter with a rounded tip and a small opening, and equipped with a strong rubber bulb for producing suction) is compressed. The glass pipette is then introduced into the posterior fornix of vagina. The pressure on the bulb is then released and the suction produced serves to aspirate vaginal fluid with its cellular content into the glass pipette. While aspiration is in progress, the tip of the pipette is moved from one side of the fornix to the other, so that all parts are sampled. The pipette is then withdrawn and the vaginal fluid is spread upon the surface of the properly labelled, dry and clean microscopic slides, with a sudden expulsive pressure on the bulb. The fluid should be spread with the convex side of the pipette on the glass slide. The smears should be thin, as very thick smears are not properly fixed and stained.

Before the smear dries, the slides are plunged into the fixative of equal parts of 95 per cent alcohol and ether kept in a stoppered glass jar or bottle. Drying of smears should be avoided as it results in the loss of the sharp outlines of the cells and a change in their staining reaction. The fixation does not require more than a few minutes, but smears may be kept in the fixative for a longer period of time. However this should not be more than two weeks as the cells tend to lose their normal staining reaction.

Endocervical smear—The epithelium lining the cervical canal is best studied by this technic. This method is thus advantageous in the search for a lesion in the cervical canal. The secretion is obtained by a metal canula, and smears are made in the same way as vaginal smears.

Endometrial smear—It is a selective smear of the endometrial epithelium. It is of great importance in the detection of cancer of the corpus. A metal canula (laryngeal canula) may be used for the collection of the secretion. The smears are made in the same way as vaginal smears.

Smears from cervical external os—It gives the cytologic picture same as the vaginal smear with the exception of vaginal cells. It can be used as an alternative to vaginal smear, and the extra advantage is that the cervical squamous cells are collected for interpretation of cervical carcinoma of the common type. The procedure is the same as for vaginal smears.

Selective scraping method—Wooden cervical scrapers are used for this method. By scraping the circumference of the squamocolumnar junction of the cervix, a true surface biopsy of the cells can be obtained before the cells are exfoliated. The smears are made in the same way as vaginal smears.

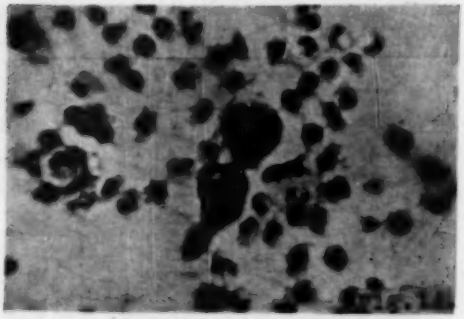
Glycerine Mailing Technic

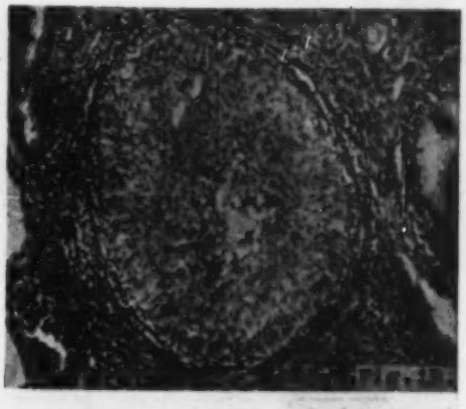
After standing in the ether alcohol fixative for one hour or more, the slides are removed form the solution. Without permitting them to dry, a large drop of glycerine is placed in the centre of the smear. A second clean slide is placed face to face with the smear, and the glycerine spreads out to cover the entire area, sealing it off completely. Thus each unit is made of two slides: (*i*) the slide with the smear and (*ii*) a clean slide acting as a cover slip. The slides are then placed in wooden or card board containers to prevent breakage, and mailed. The slides can remain in temporary glycerine mounting for two weeks. However the best results are obtained if this period does not exceed one week.

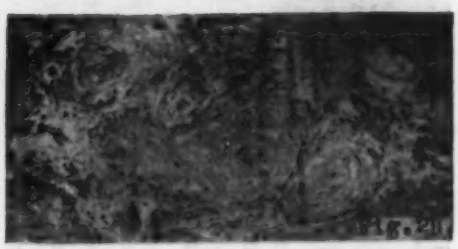
Sputum—Sputum is collected directly in 70 per cent alcohol. It is spread on slides which have been coated with egg albumin. If there are hard masses they may be crushed with another slide. Smear is fixed in alcohol and ether mixture for a minimum of one hour.

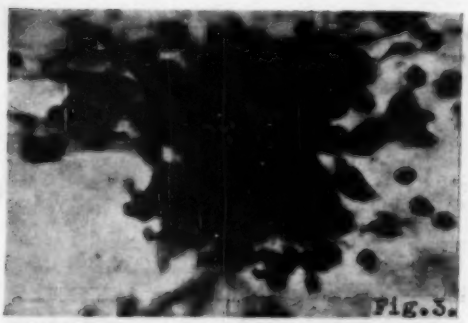
Bronchial aspirate, bronchial washing, pleural and peritoneal fluids, gastric and duodenal aspirates, and urine—The fluid is fixed immediately after aspiration in an equal amount of 95 per cent alcohol (50 c.c. of each is usually sufficient), centrifuged as soon as possible at a medium speed for 20 min. and the supernatant fluid is removed. If smears cannot be prepared immediately, cover the sediment with absolute alcohol and place in refrigerator. Smears are prepared from sediments on slides which have been previously coated with Meyer's egg albumin. Smear is spread with

PLATE I









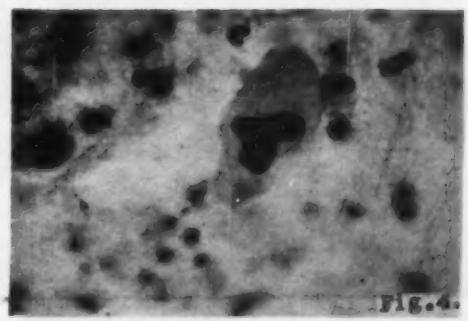
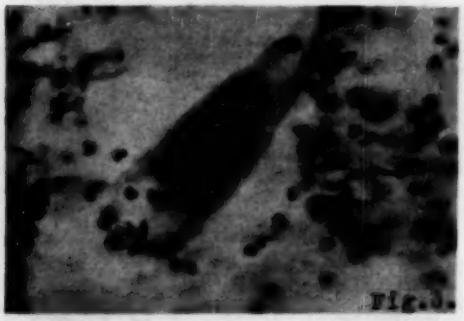
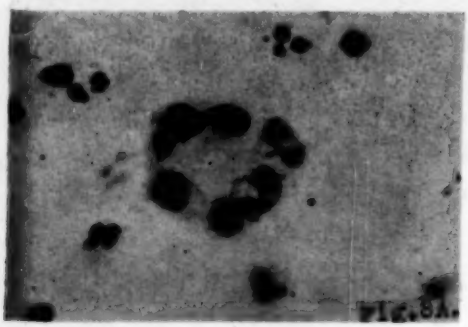


FIG. 1A—Malignant cells in vaginal smear from patient with adenocanthoma of cervix. Papanicolaou's staining method. × 485. FIG. 1B—Tissue section from the same case as 1A. Hematoxylin and eosin stain. × 430. FIG. 2A—Malignant cells in vaginal smear from patient with epidermoid carcinoma. Papanicolaou's staining. × 485. FIG. 2B—Tissue section from the same case as 2A showing epidermoid carcinoma. Hematoxylin and eosin stain. × 215. FIG 3—Clusters of tumour cells found in vaginal secretion from a patient with epidermoid carcinoma of cervix. Papanicolaou's stain × 485. FIG. 4—A malignant cell in vaginal smear from patient with epidermoid carcinoma. The cells is in mitosis. Papanicolaou's stain × 970.

PLATE 2





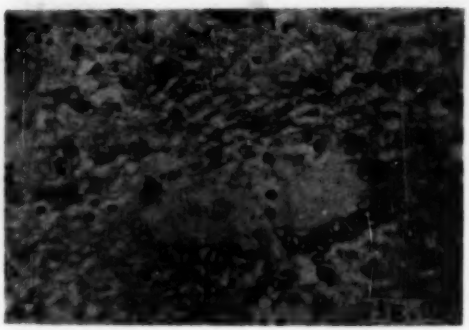
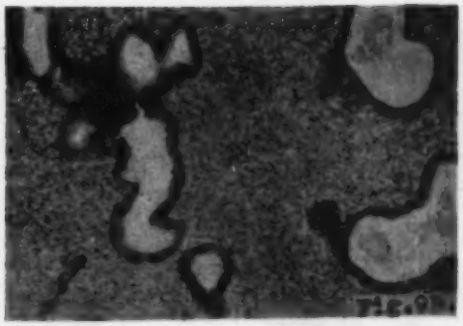
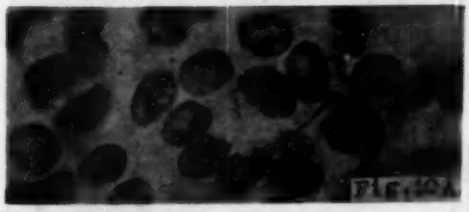
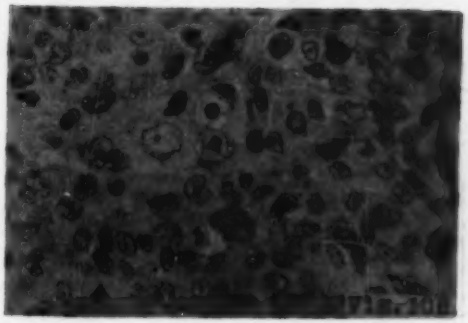


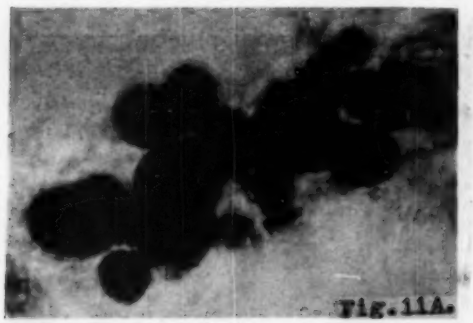
Fig. 5—Malignant cell in a vaginal smear taken after irradiation for epidermoid carcinoma. Papanicolaou's stain × 485. Fig. 6—Adenocarcinoma of endometrium. Papanicolaou's stain × 970. Fig. 7A—Cluster of malignant cells in vaginal smear from a patient with epidermoid carcinoma of cervix grade III. Papanicolaou's stain × 485. Fig. 7B—Tissue section from the same case as 7A. Hematoxylin and eosin stain × 430. Fig. 8A—Cells suggestive of adenocarcinoma. Papanicolaou's stain × 970. Fig. 8B—Tissue section from the same case as 8A showing tuberculous affection of cervix. Acid-fast stain was positive for tubercle bacilli. See discussion in text. Hematoxylin and eosin stain × 430.

PLATE 3









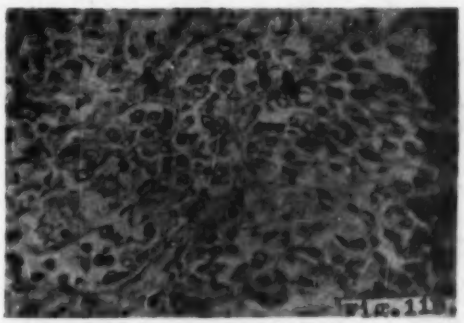
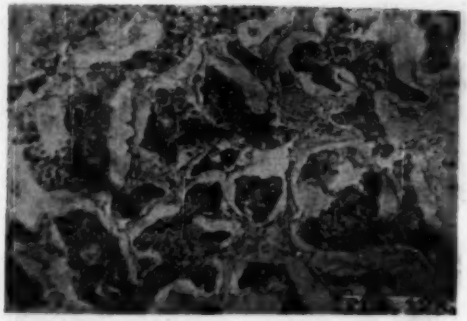
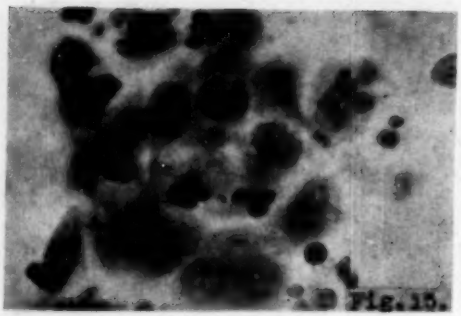


FIG. 9A—Vaginal smear suggestive of hyperesterinism. Papanicolaou's stain × 215. FIG. 9B—Section of endometrial curettage showing cystic hyperplasia of the endometrial glands. Hematoxylin and eosin stain × 100. FIG. 10A—Urine sediment smear showing malignant cells diagnostic of epidermoid carcinma of bladder. Papanicolaou's stain × 970. FIG. 10B—Tissue section from the tumour in the bladder which is epidermoid carcinoma grade III. Same case as 10A. Hematoxylin and eosin stain × 430. FIG. 10C—Malignant cells in the ascitic fluid from the case of epidermoid carcinoma of bladder. Same case as 10A and 10B. Papanicolaou's stain × 970. FIG. 11A—Urine sediment smear showing cluster of malignant cells from a case of epidermoid carcinoma of bladder. Papanicolaou's stain × 970. FIG. 11B—Tissue section from the growth in bladder, diagnosed as epidermoid carcinoma grade III. Same case as 11A. Hematoxylin and eosin stain × 215

PLATE 4





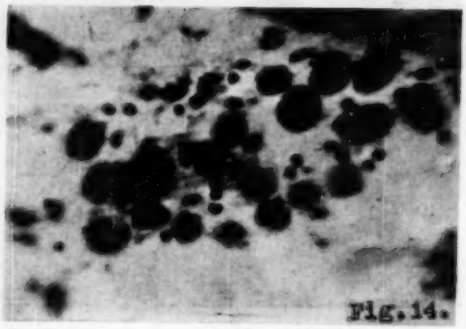


FIG. 12A—Malignant cells suggestive of adenocarcinoma in the gastric aspirate smear from a case of carcinoma simplex of the stomach. Papanicolaou's stain × 970. FIG. 12B—Tissue section from a tumour nodule showing carcinoma simplex. Same case as 12A. Hematoxylin and eosin stain × 430. FIG. 13—Carcinoma cells in sputum. Papanicolaou's stain × 970. FIG. 14—Carcinoma cells in sputum. Papanicolaou's stain × 970. FIG. 15—Carcinoma cells in prostatic smear. Papanicolau's stain × 970. FIG. 16—Malignant cells in the aspirate from Krukenberg's of the ovary. Papanicolau's stain × 970.

another slide as evenly as possible. When it starts to dry around the edge but is still moist in the centre, the slide is fixed in alcohol and ether for a minimum of one hour.

PROSTATIC SECRETIONS—Secretions are secured by digitally massaging the prostate. Care should be taken to stroke as nearly as possible only that portion of the organ which contains the suspected tumour mass. Unless the tumour extends into the seminal vesicles, the latter should be avoided, since their contents dilute the prostatic secretions. The fluid is deposited directly upon the slide and the smear prepared immediately. The smears shoud be uniform and thin. When the smears are prepared, the slides while still wet are dropped into a mixture of equal parts of 95 per cent alcohol and ether in which they are allowed to fix from 15 to 20 minutes.

Rectal discharges—Patients are prepared for sigmoidoscopy with cleansing saline enema. The material collected on cotton swabs during the examination is smeared on glass slides immediately and is fixed before drying. If the lesion is visible smears are taken directly from its surface. In cases where the lesion is not visible specimen consists of exudate and mucus clinging to the bowel wall. Bloody mucus seen coming from above the proctoscope tends to be rich in exfoliated cells. Slides thus obtained are then stained.

STAINING OF SMEARS

A. Staining solutions.

(*i*) Harris hematoxylin (aquous alum)

Hematoxylin crystals	1·0 gm.
Absolute alcohol	10·0 c.c.
Ammonium or Potassium alum ..	20·0 gm.
Distilled water	200·0 c.c.
Mercuric oxide	0·5 gm.

Hematoxylin is dissolved in distilled water while ammonium or potassium alum is dissolved in distilled water. Both solutions are heated and mixed. The mixture is brought to boil as rapidly as possible, and mercuric oxide is added. When rich purple color develops it is removed from the flame and cooled by plunging the container in cold water.

(*ii*) Orange G 6

Orange G (0·5 per cent in 95 per cent ethyl alcohol)	100·0 c.c.
Phosphotungstic acid	0·015 gm.

0·5 per cent alcoholic solution of Orange G is first prepared. The solution is heated as Orange G is less soluble. Addition of phosphotungstic acid to the orange G solution intensifies the color. The solution is not filtered.

(*iii*) EA 36

Light green S. F. yellowish (0·5% in 95% ethyl alcohol	45 c.c.
Bismark Brown (0·5 % in 95% ethyl alcohol)	10 c.c.
Eosine yellowish (0·5% in 95% ethyl alcohol)	45 c.c.
Acid phosphotungstic	0·2 gm.
Lithium carbonate (Saturated aqueous solution)	1 drop

The 0·5% alcoholic solutions are first prepared using heat, since the solubility of the stains in 95 per cent alcohol is low. The solutions are filtered separately before mixing them for the final stain.

B. Staining procedure.

80% Alcohol	
70% "	
50% "	
Distilled water ..	5 dips each and drain well
Hematoxylin	5 to 10 minutes
Tap water	10 dips
Hydrochloric acid (0·5%)	5 dips (no more)
Tap water running ..	5 minutes
50% Alcohol	
70% "	
80% "	
95% " ..	5 dips each and drain well
Orange G	45 seconds-drain
95% Alcohol	
95% "	
95% " ..	5 dips each
EA 36	1½ minutes
95% Alcohol	
95% "	
95% " ..	5 dips each
Absolute alcohol ..	2 minutes
Absolute alcohol and Xylol (equal parts)	2 minutes
Xylol	Smear can be left in xylol for 3 to 4 hrs.
Canada Balsam	Do not dry the smear Use balsam directly.

RESULTS

During the period of one year 110 specimens obtained from hospital patients were examined by this method. These were comprised as follows: vaginal-89; gastric-4; urinary-6; bronchial and pulmonary-3; prostatic-1; pleural fluids-2; aspirated fluids-4; ascitic fluids-1.

Of this group of 89 cases in which vaginal smears were examined, biopsies were done in 39 cases, and 23 have been proved to have carcinoma of the cervix or corpus uteri. Of these 23 proved cases of carcinoma, vaginal smears were reported diagnostic of cancer in 22, while in 1 case the smears were reported negative. The biopsy in the last case showed hyadatiform mole with early malignancy.

The smears thus gave positive results in 95·6 per cent of cases. There was only one false negative, and no false positive. The analysis of 15 cases where biopsy was negative for malignancy gave some interesting observations. Two cases were clinically diagnosed as carcinoma and reported positive in vaginal smears:

	Clinical diagnosis	*Smear diagnosis*	*Biopsy diagnosis*
Case I	Cancer cervix	Adenocarcinoma	Tuberculosis of cervix
Case II	Cancer cervix	Epidermoid carcinoma	Radiation reaction No malignancy

In both cases the smears and biopsies were examined after radiation therapy. Clinically both cases had undoubted carcinoma, so much so that the radiologist did not wait for the biopsy report before starting the therapy. We do not think that these were false positive cases. The first case probably had both tuberculosis and carcinoma co-existent. In both cases biopsy did not reveal carcinoma owing to previous irradiation of the lesion. This emphasises the impor-

tance of smear examination in detection of recurrence after radiation.

Three of the last 15 cases were negative both by biopsy and by smear examination, though diagnosed carcinoma of cervix clinically. After the biopsy and smear reports the surgeon re-examined the cases and changed the clinical diagnosis. The remaining ten cases were negative clinically as well as by biopsy and smear examinations.

Of the 50 cases where biopsy was not done 23 were positive by smear examination and supported by clinical diagnosis. 22 were negative in smear as well as clinically. The five cases which were negative by smear examination but clinically diagnosed as carcinoma are as follows:

Case	*Clinical diagnosis*	*Smear diagnosis*
1	Carcinoma of cervix	Menopausal cells only
2	Carcinoma of cervix	Blood clot only
3	Adenocarcinoma uterus?	No malignant cells
4	Choriocarcinoma?	Postpartum condition No malignant cells
5	Precancerous cervix?	Hyperesterinism No malignant cells

The last three cases were suspicious only clinically and unless confirmed by biopsy cannot be regarded as false negatives. Case No. 2 had a poor smear and this could not be repeated as the patient would not stay in the hospital. Case No. 1 was the only one case where the clinician was certain of her diagnosis though the smear was negative for malignancy. Though not proved conclusively, yet it may be regarded as the only possible false negative out of this group of 50 cases.

TABLE I—SHOWING GENERAL SUMMARY OF CASES

Smear diagnosis	*Number of cases*	*Biopsied cases*			*Unbiopsied cases*		
		Total	Biopsy positive	Biopsy negative	Total	Clinically positive	Clinically negative
Epidermoid Carcinoma	38	20	19	1	18	18	0
Adenocarcinoma	3	2	1	1	1	1	0
Undifferentiated carcinoma	2	2	2	0	0	0	0
Suggestive of malignancy	3	0	0	0	3	3	0
Smear diagnosis positive	46	24	22	2	22	22	0
Smear diagnosis negative	43	15	2	13	28	23	5

Smears of body fluids and secretions examined from cases with suspicious malignancy in various organs are not many, but still the results are encouraging. Gastric aspirates were examined from 5 cases and one was positive for adenocarcinoma. Two showed evidence of gastritis and two were completely negative. Urine was examined in 5 cases of suspected carcinoma of bladder. Two were positive for carcinoma and both these were confirmed as epidermoid carcinoma by biopsy. One of these had ascitis and the ascitic fluid also showed carcinoma cells. One was a case clinically diagnosed as epidermoid carcinoma of rectum extending to bladder. Urine was negative and histologically the original lesion turned out to be lymphogranuloma. Sputum was examined in four cases of suspected malignant disease of the lung and was positive in three cases. Prostatic secretion was examined in one case and was positive. This case is interesting and is quoted below.

REPORT OF CASES

Case 1—A 38 year old Hindu female entered the Lady Lyall Hospital because of pain in lower abdomen for 3 months and bleeding p.v. off and on for 4 months. She had 10 children, the last one 5 years back. Clinical diagnosis of cancer of the cervix was made. Examination of the vaginal smear revealed the presence of malignant cells suggestive of adenocarcinoma (Fig. 1A). Biopsy showed the presence of an adenoacanthoma (Fig. 1B).

Case 2—A 50 year old Hindu female was admitted for bleeding p.v. for 3 months, leucorrhœa for 4 months, and pain in abdomen for 8 days. She had menopause for last 6 years. She was provisionally diagnosed as carcinoma of cervix. Vaginal smear was diagnostic of epidermoid carcinoma (Fig. 2A). This was confirmed by biopsy (Fig. 2B).

Case 3—This 35 years old Hindu female was admitted to the hospital complaining of bleeding p.v. for 4 months. Before this she had amenorrhœa for 6 years. Vaginal smear examination showed the presence of malignant cells suggestive of epidermoid carcinoma (Fig. 3). No biopsy was done.

Case 4—A 40 year old Hindu female entered the hospital with bleeding and offensive discharge for 3 months. This had started after a miscarriage 3 months before. The patient was admitted to the septic ward. As the patient was bleeding p.v., vaginal smears were made and these revealed the presence of epidermoid carcinoma (Fig. 4). The figure shows that sometime single cells are as diagnostic as a group of cells.

Case 5—A 35 year old Hindu female was admitted to the hospital complaining of bleeding and watery discharge p.v. with pain in lower abdomen for last 6 months. Hysterectomy was done 3 months before

admission. Clinical diagnosis of endocervical carcinoma was made. Vaginal smear examination showed the presence of malignant cells and evidence of radiation reaction (Fig. 5). It was later learnt that she had deep x-ray exposure previous to admission. No biopsy was done.

Case 6—A 50 years old Muslim female was admitted with profuse bleeding for 7 days and severe pain in lower abdomen and back. Off and on she has been bleeding for last 6 months. Vaginal examination revealed a bulky and soft uterus. Cervix was normal. The right fornix was slightly full, the left one was clear. No definite clinical diagnosis was made though adenocarcinoma was suspected. Vaginal smears were diagnostic of endometrial adenocarcinoma (Fig. 6).

Case 7—A 40 year old Hindu female was admitted to the hospital with bleeding p.v. for 6 months and weakness. The patient had 3 children alive and three abortions. Vaginal smear was diagnostic of epidermoid carcinoma (Fig. 7A), and this was confirmed by biopsy (Fig. 7B).

Case 8—This 40 year old Hindu female was admitted to the hospital for bleeding and offensive discharge p.v. for 25 days. She had 4 full term normal deliveries and two are alive. Last child birth was 2 years back. Vaginal examination revealed a nodular cervix which bled on touch. There was a fungating growth of cervix involving both anterior and posterior lips. Uterus was fairly mobile. Growth extended up the left and posterior fornices. She was clinically diagnosed as cancer of the cervix. Vaginal smear examination diagnosis was that of adenocarcinoma (Fig. 8A). A biopsy was taken and histological examination revealed tuberculous infection (Fig. 8B). Ziehl-Neelsen stain was positive for tubercle bacilli. Patient left the hospital and all attempts to get her back for anoher biopsy have failed till now. Clinically and smear examination she definitely had carcinoma of cervix. Probably she had both lesions co-existent.

Case 9—A 19 year old Hindu female was admitted to Dufferin hospital, Meerut for irregular bleeding p.v. for 6 months with irregular periods since the menstruation started 4 years back. Menstrual discharge was profuse and prolonged. Vaginal examination revealed an underdeveloped uterus with a small cervix. Vaginal smears revealed the presence of numerous acidophil cells with small or pyknotic nuclei. Many cells were large and discrete resembling the cells of follicular type. Small cytoplasmic granules mostly dark are frequently seen scattered throughout the cytoplasm. The presence of many acidophilic cells is the result of prolonged esterogenic action. The diagnosis of hyperesterinism was made. This was confirmed by examination of endometrial curretting which revealed cystic hyperplasia (Figs. 9A and 9B).

Case 10—A 56 year old Hindu female was admitted to the hospital with complaints of burning during micturition. Urine sediment was examined by the Papanicolaou technic and reported as diagnostic of epidermoid carcinoma (Fig. 10A). Pyelography showed delayed excretion while cystography showed a growth, a piece from which was sent for histological examination. This showed epidermoid carcinoma grade III (Fig. 10B). The patient died and on p.m. she was found to have ascites. The ascitic fluid was examined by similar method and malignant cells were detected (Fig. 10C).

Case 11—A 55 year old Hindu male entered the hospital complaining of retention of urine and frequency of micturition. He had attacks of colicky pain accompanied with incontinence of urine and faeces at the time of pain. Urine was examined and cells diagnostic of epidermoid carcinoma were found (Fig. 11A). This was confirmed by the biopsy which showed an epidermoid carcinoma (Fig. 11B).

Case 12—A 50 year old Hindu male was admitted with complaints of anorexia, weakness, edema over the feet and marked anemia. Gastric aspirate was examined by this method and found to contain malignant cells, suggestive of adenocarcinoma (Fig. 12A). Radiological report after barium meal was cancer of stomach in the region of greater curvature. Laparotomy was done and there was found to be generalised carcinomatosis. Histological examination of a tumour nodule showed carcinoma simplex. This was secondary to the primary growth in stomach (Fig. 12B).

Case 13—This 35 year old Hindu male entered this hospital because of a severe cough with expectoration of several years' duration. Roentgen examination showed a homogenous dense lesion in the upper and middle lobes of the right lung. Sputum contained no acid-fast bacilli. This case was in the hospital before this laboratory started functioning and was being treated as tuberculosis of the lung. Later on sputum examination by Papanicolaou's method revealed cell groups diagnostic of carcinoma (Fig. 13).

Case 14—This 45 year old Hindu male was admitted to this hospital with complaints of cough with expectoration. Clinical signs of consolidation of upper lobe of the right lung were present. Roentgen examination showed the right upper lobe of lung to be radio-opaque. Sputum contained no tubercle bacilli. Sputum was examined by this method and cancer cells were detected (Fig. 14).

Case 15—A 50 year old Hindu male was admitted to this hospital complaining of pain during micturition for 1½ years. Rectal examination revealed an enlarged hard prostate. Suprapubic cystotomy was done 1½ months back and diagnosis of prostatic carcinoma was made. Orchidectomy was performed one month back and the tumour apparently regressed. Needle biopsy was later on performed through the perianal region and the histological examination revealed only fibrous tissue with very little muscular or glandular tissue. There was no evidence of malignancy. Prostatic smear was made after prostatic massage and examined after staining with this technic. Cancer cells were found (Fig. 15).

Comments

In interpreting the cells in smears it is best to observe the criteria laid down by Papanicolaou. Cancer cells should show: (1) anisocytosis, (2) anisokaryo-

sis, (3) hyperchromasis (abnormally densely stained karyosomes and nuclear membrane), and (4) abnormal mitotic figures. All of these may not be present yet it is safer to look for most of these before opinion is given. We have found nuclear changes as the most important criteria of malignancy. Change in nucleo-cytoplasmic ratio, *i.e.*, a nucleus larger than normal in proportion to cytoplasm, should arouse suspicion especially if the large nucleus has an unusual appearance in arrangement of chromatin. The nucleoli are often large. Mitotic figures may be seen but in our experience these were not common and their absence should not go against malignancy. It is possibe that by adherence to these strict criteria better differentiated tumours may sometimes be missed and false negatives reported but with practice the pathologist will ultimately recognise these. However strict adherence to the criteria can only lead to a few false negatives which are definitely more desirable than false positives.

Our greatest series are vaginal smears. These have been reported as 95·6 per cent correct and no false positives were reported. Other series are far too few to warrant any opinion. However the published reports are unanimous that bronchial washings and sputum are comparatively simple to evaluate. Gastric fluids and washings present the greatest difficulties. This technic of exfoliative cytology, is also applicable to examination of aspirated cells from manifest tumours or cysts. This we did in one case of Krukenberg's tumour of the ovary (Fig. 16).

It is important to bear in mind that a negative smear should not be considered as a failure of the technic, but may be due to the fact that cells are not being exfoliated. Shedding of cells will not occur unless cancer is extended superficially. Negative report therefore does not rule out cancer. Confirmation by biopsy is advisable, though in rare cases this may not be feasible, *i.e.*, a small lesion may exfoliate cells but remain invisible to the naked eye. As Fremont-Smith, Graham and Meigs (1948) state "it is shown that invisible lesions (cervix), noninvasive lesions (cervix) and tumours inaccessible for visualisation or biopsy (lung or prostate) can be diagnosed by a study of exfoliated cells with an accuracy comparable to that of biopsy. Radical therapy is justified, however, only if confirmatory evidence is obtained. A negative smear should never outweigh other evidence in favour of malignant disease. To the group of inaccessible tumours may be added tumours of renal pelvis, of renal parenchyma if invading pelvis, and of ureter.

We feel that the greatest advantage of the exfoliative cytology is the diagnosis of carcinoma in its incipiency, so that there may be possibility of eradicating the lesion beore it is too late. In such cases smear may give the only valid evidence of malignancy. Still the dictum that positive smear should be confirmed by a positive biopsy before a surgeon undertakes radical therapy, should be strictly followed because nothing could be more damaging to the pathologist than a false positive report. Greatest importance of the exfoliative cytology is therefore, as a screening test, especially when other diagnostic facilities are not available, or when early diagnosis cannot be made by other means. For example, one woman in every 100 bears in her cervix an early malignant lesion, often invisible and symptomless. This can only be detected on routine vaginal smear examination of patients attending the hospital. The experimental study conducted by Lombard *et al* (1948) in Boston with a view to determine whether vaginal smears could be useful as a screening test to detect symptomless carcinoma, or as a routine diagnostic procedure in all gynæcological cases provided some interesting observations. They studied 2,876 cases of which 1,364 had symptoms suggesting gynæcological disorders and 1,512 gave no history of such symptoms. In the symptomless group 8 positive smears were found and it was concluded that cytologic test may reveal uterine cancer in 1 of 200 to 500 women free from symptoms. In patients with gynæcological symptoms 133 positive smears were obtained. Of these 89 were confirmed by biopsy. The authors believe that the technic in likely to lower cancer mortality.

Summary

Smears from various sources were studied to determine the place of this method in the routine diagnosis of the presnce of carcinoma.

The technic employed was the one described by Papanicolaou, both in fixing the smears as well as staining them.

Cancer cells in smears could be distinguished from normal cells by numerous atypical characteristics including large size, variation in size and shape of cell or of nucleus, the nucleo-cytoplasmic ratio, hyperchromatism of the nucleus and the presence of large nucleoli.

Vaginal smears which form the greatest number in this series gave positive results in 95·6 per cent cases. There was one false negative and no false positive result.

Besides the diagnosis of cancer of cervix and uterus where it was first applied, the method is of value in the diagnosis of cancer of bladder, prostate, stomach, rectum and lungs.

We found chief advantages of the smear technic to be (1) provision of a means of diganosis of visceral cancer especially when facilities for biopsy or curettage are not available, (2) avoidance of hospitalisation for diagnostic curettage or biopsy in cases proved negative by the smear method, and (3) concentration on cases found to shed cells suggestive of malignancy.

The smear may be available in diagnosis of recurrence after irradiation when biopsy is often undesirable.

We found the chief disadvantages to be (1) preparation of inadequate samples in cases of vaginal smears because of lack of skill in obtaining the smear. As the patients will not allow us to prepare the smear we had to depend upon the house surgeons, (2) faulty fixation making recognition of cells difficult, (3) degenerative changes due to necrosis or radiation and (4) time required to diagnose especially the more obscure smears. The last could be overcome by train-

ing a technician who should be a graduate in biology trained enough to recognise the cell structure. He could do the screening of the smear for final diagnosis by the pathologist.

The glycerine mailing technic used by us is useful in getting the specimen from outside.

It is our impression that this procedure is promising in a high degree though at the present stage the method has limitations.

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ASTHMA, VERTIGO, SLEEPLESSNESS AND SCHIZOPHRENIA SYNDROME

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The causes of asthma (bronchial), vertigo, and sleeplessness are many. and if the three manifestations appear in the same individual, either separately or in quick succession as though in combination. the clinician is tempted to think if the etiology could have anything common. Some patients with the above morbid triad have manifested also a schizophrenic tendency.

Asthma (at least one definite type) has an allergic basis and is usually associated with low blood pressure. Persons with hypotension (allergic basis? adrenocortical hypofunction?) complain of vertigo. Hypotension may be one of the causes of sleeplessness. Thus it is possible that an individual with allergic diathesis can be a subject of one or more of asthma, vertigo, and sleeplessness. There has been some work to show that in schizophrenia adrenal tumours were of aetiological importance. Rheumatic heart disease and atrophied testes have also been reported, post mortem, associated with schizophrenia. Hypotension is known to have hypochloraemia in blood, which is also characteristic of adrenocortical deficiency.

In the following a few case records are summarised to produce evidence in favour of the above syndrome tetrad.

Case Reports

Case 1—An adult of 40 years. First came under the writer's observation for typical asthmatic spasms 14 years ago. X-rays of chest and sinuses, revealed nothing particular. Blood Kahn and Wassermann negative; urine, stool, blood counts, nothing abnormal except only a slight eosinophilia, 8 per cent noted. During the last 4 years the patient had either vertigo or insomnia. Blood pressure low 100/60. Patient is intelligent and once exhibited mental deterioration (schizoid). When free from asthma and vertigo the patient is sleepless.

Case 2—An adult of 55 years. Confirmed asthmatic for 30 years. Two sons of the patient are asthmatics; one of them has psoriasis. Another son has rheumatic heart, and yet another son showed mental symptoms on the eve of stress and strain. A daughter has migraine. The patient is intelligent and active. His B.P. is low 100/70. He once fell to the ground with vertigo, and frequently complains of insomnia. X-rays of the chest and sinuses, blood counts, and examination of urine. stool, sputum all show nothing abnormal; not even a marked eosinophilia which is only about 4 to 9 per cent Kahn and Wassermann negative.

Case 3—An adult of 50 years. First observed with vertigo. B.P. 100/50. Has bouts of asthma or insomnia. Investigations negative. (Kahn and Wassermann tests negative).

Case 4—An intelligent adult of 25 years. Asthmatic and suffers from vertigo and insomnia. B.P. 80/40. X-rays of the chest and sinuses, blood count—eosinophilia 12 per cent—and other investigations reveal nothing abnormal. Kahn and Wassermann negative. The patient is shy, secluded, and having paranoid leanings. A brother of this patient is rheumatic and a niece died of hepatic cirrhosis.

Case 5—An adult of 60. Recently died as a mental patient—schizophrenic. The patient is the son of asthmatic mother, and he himself suffered from asthma fifteen years ago. Two years ago the patient complained of vertigo and insomnia. B.P. 100/50. Kahn and Wassermann tests negative. X-rays of the sinuses, chest and skull negative. Other investigations not helpful. This patient has a daughter with advanced mitral stenosis, one son with asthma, and a second son with migraine. Many other children died of hepatic cirrhosis.

All the above patients are males. One adult woman of 35 years with asthma is suffering also from mental trouble (schizophrenia) and further study was not possible..

The writer is submitting the above as a narrative as the patients have been followed constantly for years as private patients. Many more such patients are in the mind of the writer but they have been precluded from this communication because of incomplete investigations.

This syndrome tetrad appears to be composed of asthma, vertigo, sleeplessness, and schizophrenia. Can we attribute the manifestations to a common basic defect like adrenocortical insufficiency and allergy?

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INCREASED INTRACRANIAL PRESSURE AND OPHTHALMOLOGY

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The eye is the window of the brain. As an appendage of the nervous system, the eye may offer warnings and indications of highly important and significant changes in intracranial physiology. The optic nerves, retinæ and the bood vessels suffer simultaneously with the lesions in the cranial cavity. Many and varied alterations occur, which help in the diagnosis ophthalmoscopically of hæmorrhages, certain neoplasms and infections. Even pathological diagnosis and localization can be had for the asking, if one tries to read the various pupillary changes and the extra-ocular faults of innervation. No neurologic investigation is complete without perimetric studies. Ophthalmology exposes the ocular muscle balance, pathological changes in the fundii, if any, and the limits of the visual fields. Thus one can deduce from ocular palsy, papilloedema, optic neuritis, optic atrophy and defects in the peripheral fields the actual condition of the brain and its membranes. These data aid in the confirmation of the impression obtained at neurologic examination (Adson, 1947).

A few decades ago, symptoms of increased intracranial pressure were considered to be manifestations of a gumma, until proved to the contrary. To-day the medical student speaks of angle tumours, parasagittal meningiomas, and astrocytomas of the cerebellar vermis with the air of a professional. An attempt at localization of presumed intracranial tumour is a serious part of his work in the ward and the clinics.

Causes of Increased Intracranial Pressure

Increased intracranial pressure may be due to:

(1) The space occupying properties of the tumour itself, thus causing an increase in the cerebral contents.

(2) Obstruction to some parts or the whole of the ventricular system, thus producing obstructive hydrocephalus.

(3) A lack of normal cranial capacity as in oxycephaly.

(4) The reaction of gliosis which a tumour of the nervous tissue so frequently provokes.

(5) Circulatory disturbances causing œdema, hæmorrhage or infarction, provoked by a tumour or systemic diseases like anæmia or nephritis.

General Signs of Increased Intracranial Pressure as Manifested in the Eye

Besides the pathological dilatations and other changes brought about in the ventricles by increased pressure, the incidence of papillœdema or choked disc is of the greatest importance. However the symptoms vary remarkably in incidence and severity from one case to another, and according to Corville (1937), we may find patients with similar lesions in a given location demonstrating considerable difference in the severity of pressure symptoms. This can be attributed to a variation in individual susceptibility to increased pressure, or to an inherent difference in the local cerebral circulation, and lastly to difference in the behaviour of the causative factors themselves. It has been made amply evident that the ratio of the rate of growth of the tumour to the increase in the intracranial pressure is proportional, other factors being equal.

Ocular evidence of increased intracranial pressure is of two kinds, subjective and objective.

Subjective signs—These consist of dimness and blurring of vision and occasional diplopia which is very harassing. Also headache, which is accompanied in many instances with pain in the eyeball.

Objective signs—These are found by ophthalmoscopic examination and by perimeter and by observing the functions of the extraocular muscles, and pupillary changes.

Fundus—Changes in the discs like papillœdema, optic neuritis, optic atrophy, changes in the appearance of blood vessels and surrounding retina.

Pupillary changes — Demonstrating ophthalmoplegia interna, or the sluggishness to react to light, etc. Then next come the extraocular muscles affected with palsy, and lastly the visual fields which show the extent of peripheral vision.

Fundus—The first signs visible in the fundii are usually a minor degree of choking of the discs, now universally known after Parsons (1908), as papillœdema, fuzziness of nasal margins and slight dilatation of the veins. If the arteries are found similarly affected or tortuous, one must look for a general disease or local pathological disturbance in the eyeball. As the choking increases, the physiological cup fills in with exudate. The arteries straighten, the veins become more dilated and tortuous. We also

find exudate formed round about the vessels. Evidences of small radial hæmorrhage can be had round about the discs whose margins now disappear. By this time the elevation of the papilla is generally measurable. I will not enlarge upon the technique of measuring the degree of elevation, but I will stress upon one important fact, and that is to advise the examiner to completely relax the accommodation of his eye and make allowances for astigmatism which may exist, otherwise the accuracy will be nullified. Elevation as high as 9 diopters has been measured (Neilsen,1941), but an average one of 4 or 5 diopters is a very considerable choked disc.

After the papillœdema has been present for some time, say weeks, atrophy often begins presenting a white disc with furred or feathery edges. This is a characteristic secondary type, and side by side a good evidence of intracranial raised pressure, either past or present. The highly characteristic syndrome of Foster Kennedy consists of optic atrophy which is unilateral and a contralateral papillœdema associated with anosmia. One can directly and definitely lay his finger on the causative tumour which grows at the base of frontal lobes, by observing this syndrome.

The optic nerves are not only vulnerable to increased intracranial pressure, but also directly to the pressure of a neoplasm like pituitary tumour. The rise in the intracranial pressure is by far the commonest cause of papillœdema and accounts for the great majority of cases. Uhtoff's (1914) statistics showing the etiology of bilateral papillœdema is interesting:—

Brain tumour	71·0%
Tuberculosis	3·6%
Cerebral syphilis	12·0%
Oxycephaly	2·2%
Brain abscess	2·2%
Hydrocephalus and serous meningitis	2·2%
Cysticercus	1·1%
Meningitis	1·1%
Nephritis	1·1%
Anæmia	0·9%
Sinus thrombosis	0·6%
Lead poisoning	0·6%
Traumatic hæmatoma	0·3%
Bony cicatrix of skull	0·3%
Retrobulbar septic process	0·3%
Pseudoneuritis with cerebral symptoms	0·3%
Diagnosis uncertain	2·2%

It would be further interesting to glance at Martin's statistics in whose series of 601 cases, dating from 1897 the following could be gathered:—

Tumours of corpora quadrigemina	100%
Cerebellum and parieto-occipital region	89%
Frontal region	84%
Basal ganglia	75%
Temporal lobe	68%
Centrum ovale	67%
Motor area	62%
Corpus callosum	46%

This is a valuable study in the incidence of papillœdema in relation to location of cerebral lesion (Neilsen, 1941). Tumours of pons and medulla do not usually give rise to papillœdema since the flow of cerebrospinal fluid is unobstructed. Cerebellar tumours and abscesses, on the other hand, cause early papillœdema, while lesions in other locations require more time to produce the swelling of the nerve.

Optic Neuritis—The difference between optic neuritis and papillœdema cannot be discusesd here at length, suffice it to say that the term papillœdema be reserved for cases showing more than 2 diopters of swelling, associated with raised intracranial pressure, and papillitis or optic neuritis for more moderate degrees of varied etiology (Duke Elder, 1940). Optic neuritis is found in cases of meningitis of all sorts.

Secondary Optic Atrophy—As has been stated before, it is found as a sequel to optic neuritis or papillœdema.

Primary Optic Atrophy—It is found in cases of pituitary and suprasellar tumours and in Foster Kennedy syndrome.

Pupillary Changes—Pupils sluggish to light are pathognomonic of raised intracranial pressure. All sorts of fractional disturbances are met with, causing irregularity of pupils, due either to interference with the reflex arc, or the motor arm of the reflex arc, or the synaptic relation between the sensory and motor arms of the reflex arc. Ophthalmoplegia interna is also encountered, indicating pathologic rise of intracranial pressure in certain cases of brain tumour while ophthalmoplegia totalis is met with in ruptured aneurysm of the circle of Willis or in general inflammatory reaction at the base of the brain on one side only.

Extraocular Palsies—These are common in cerebellar disease, but they are indirect signs of hydrocephalus which so often accompanies cerebellar

lesions with raised pressure. Nystagmus is also an important sign and many a time helps in localising a cerebellar tumour or abscess. It is in fact a constant sign of cerebellar disease, though it is of vestibular origin. The paralysis of the extraocular muscles is a frequent occurrence, as the nerves supplying them are very delicate and are prone to compression due to their long course.

The third nerve may be compressed by general intracranial pressure as in subdural hæmatoma in which a small pupil to begin with becomes large in due course. Intracranial pressure from any cause whatsoever, may cause paralysis of the nerves. In general intracranial pressure or acute hydrocephalus, the sixth nerves are apt to weaken before any other nerves. They may be compressed at the nucleus in pons by a cerebellar abscess or tumour.

Visual fields—During the stage of acute and active papillœdema, the blind spot is increased in size and is a good evidence of the œdema of the nerve head. Tumours in certain localities cause gross disturbances of the fields. Monocular hemianopia occurs from pressure on the optic nerve. The variety of field defects is very nicely demonstrated in tumours of the pituitary body.

Now we will view briefly the various conditions or diseases which offer ophthalmological findings related to increased intracranial pressure.

Intraspinal lesions—I will limit myself to cervical region. The symptoms are similar to those of involvement of medulla oblongata. The oculo-pupillary symptoms consist of contraction of one pupil with narrowing of the palpebral fissure, and enophthalmus. We must here remember that the foramen magnum is in close vicinity of the lesion and so the symptoms may simulate those of brain tumour, such as projectile vomiting and papillœdema.

Traumatic cerebral contusion and laceration—The signs of cerebral œdema and increased intracranial pressure usually supervene. We find the simple picture of concussion in a fair number of cases complicated by a simultaneous contusion and laceration. This is specially seen in cases associated with fracture of the skull. Papillœdema does not appear in a few hours. The only accurate guide to the existence of increased pressure in absence of papillœdema, is the spinal manometer. Patients with perfectly clear fundii may die of medullary compression in ten hours. (Neilsen, 1941).

Intracranial aneurysms—Presence of an intracranial aneurysm can be detected by a bruit, intracranially, which occurs all of a sudden together with a pulsating exophthalmos. This would mean that a cavernous sinus is communicating with a large artery. There may of course be a history of penetrating injury or fracture of base of skull on the other hand. Ophthalmoplegia is the more common finding in cases of large aneurysms which involve the internal carotid artery. This may be possible when there is extensive hæmorrhage along the course of the third nerve. This nerve is an easy victim to sudden localised pressure. Papillœdema also occurs in a certain number of cases in association with preretinal hæmorrhages, which are pothognomonic of subarachnoid hæmorrhage. The onset of a sudden ophthalmoplegia together with pain about the eyes and forehead is also very suggestive of an aneurysm. Optic pallor in certain cases may be due to direct pressure of an aneurysm on the nerve. Aneurysms generally cause affection of ipsilateral cranial nerves.

The symptoms of rupture are more definite. The extracerebral yet intracranial hæmorrhage presents one fixed pupil which is larger and one small which probably is sluggish to light, is chracteristic of lesion about the anterior part of the circle of Willis. It is of great importance to examine the eye very carefully. Spinal puncture will show fluid under high pressure and freely mixed with blood.

The various inflammations and infections of the brain give rise also to raised intracranial pressure which in turn manifests itself in the eye producing certain recognisable signs.

Leutic meningitis—There are two forms, the acute and the chronic, which have different ocular symptoms. In the acute form there is photophobia, headache, extraocular palsies with diplopia, and positive Wassermann and Kahn tests. In the chronic form, which is usually associated with gumma formation, or which may be in conjunction with adhesions between dura and arachnoid, or between the latter and the pia, there are formed occlusions in patchy areas in brain. Arachnoid block appears, consequently developing hydrocephalus which causes papillœdema or optic atrophy with failure of vision.

Gumma and Leptomeningitis—In this the syndrome is that of brain tumour in presence of syphilis. The old question arises whether one is dealing with constitutional syphilis with a superimposed cerebral tumour, or whether syphilis is causing the focal symptoms and papillœdema. Many a life has been lost unnecessarily because of a tumour while the family physicians were vainly attempting to cure syphilis. This is a particular instance of a disease where it has been observed times without number that a general practitioner might observe a case for months before

concluding that a neuro-surgeon or an ophthalmic surgeon should be consulted.

Thrombosis of the cavernous sinus—This is mostly due to infection and may not be associated with cerebral abscess. The corresponding eye becomes hyperæmic and proptosed. The conjunctivæ are chemosed, and there is ophthalmoplegia totalis. The pupil may react to light for some time; It, however, becomes fixed later.

Cerebral abscesses of which the temporal lobe abscesses are most common after otogenous infection, the symptoms are generally evident in the second stage. This corresponds pathologically to the stage of encapsulation. Besides temperature, headache, vomiting, mental, gastro-intestinal symptoms and signs. The ocular signs are papillœdema to a mild degree, in contrast to the severe form met with in cerebellar abscesses. The first sign is hyperæmia and blurring of the disc margins. Then exudate gets deposited on the nerve head. The swelling reaches upto 3 diopters only, unless the case is of long standing. If the abscess remains unattended for sometime one finds secondary optic atrophy. The papillœdema and sequelæ develop in the ipsilateral eye (Uhtoff, 1914).

But if there is a difference in the intraocular tension in the two eyes papillœdema will be seen first in the soft eye. This makes the location of the laterality of the abscess uncertain. The disturbances in the fields of vision if mapped out daily according to Eaglton (1922), would show quandrantic and hemianopic defects. These are due to inflammation and œdema about the abscess.

The 3rd, 4th, 5th, and 6th cranial nerves especially on the same side as the abscess are often weakened by the general intracranial pressure. The third nerve may even be flattened (Macewen). The ipsilateral pupil primarily is smaller but consequently becomes larger, with the reaction to light sluggish compared with the other pupil. Pain in the ipsilateral eye is highly characteristic of temporal abscess, and is probably due to irritation of the recurrent branch of trigeminal supplying the meninges of the middle cranial fossa. Signs of conjugate deviation of the head and eye rarely manifests itself. If at all it does occur, the deviation is towards the sound side early in the disease, and from it later on, and is usually associated with hemiplegia.

Parietal lobe abscess—Here there is homonymous hemianopia and conjugate deviation of the eyes, and during a convulsion the latter is away from the lesion and later on towards it.

Cerebellar abscess—This is accompanied by an early and severe papillœdema and in uncomplicated cases with coarse nystagmus to the side of the abscess, or to both sides. The nystagmus is mainly caused due to secondary irritation of the vestibular mechanism. In cases where otogenous abscess has formed and which has caused labyrinthine irritation, the evaluation of the nystagmus becomes very complicated. In very young children the sutures separate with development of hydrocephalus and this prevents the early papillœdema though at the cost of internal hydrocephalus and thinning of the cerebral cortex. In short the strong indications of cerebellar disease are: True adiadokokinesis, coarse nystagmus, past pointing, early and severe papillœdema and definitely abnormal vestibular response.

Tubercular meningitis—The characteristic meningeal symptoms which may be slight in degree in certain cases a little prior to is becoming fatal, are due to inflammation in the basilar meninges. The extraocular paralysis becomes evident when the basilar cisterns are full of exudates. The internal hydrocephalus is responsible for the symptoms of raised intracranial pressure.

And now we come to the most common and important cause of increased intracranial pressure:

Brain tumour—Expanding lesions of the brain manifest themselves clinically by signs of increased intracranial pressure, *viz.*, headache, vomiting and papillœdema. The ophthalmoscope and the perimeter play very important parts in diagnosis and localization of a brain tumour, respectively. The ophthalmoscope demonstrates the papillœdema, which apart from diagnosis may also be valuable in localizing tumours of the third ventricle or those of the posterior fossa, the perimeter and campimeter the visual field defect when some parts of the optic pathways are encroached upon by the lesion.

Frontal lobe tumours—The Foster Kennedy syndrome, as has been already described, is due to the space occupying lesion of the frontal lobe. According to Lillie (1927) the characteristic sign in a unilateral lesion is a homolateral central, or coecocentral scotoma associated with either a normal pale or atrophic or choked disc with contralateral normal central vision and papillœdema.

Temporal lobe tumours—Ophthalmoscopic examination reveals bilateral papillœdema, visual hallucinations and quadrantic homonymous hemianopia.

Occipital lobe tumours—Homonymous hemianopia associated with negative neurological findings,

is pathognomonic if accompanied with aphasia and word blindness. There is also bilateral papilloedema which appears early. The visual hallucinations are unformed, while they are formed in temporal lobe tumours.

Quadrigeminal plate tumours—The ocular symptoms are skew deviation of the eyes with paralysis of upward gaze. Argyll Robertson pupils are present. Papilloedema and other signs of increased intracranial pressure are present. Diplopia, tremors and rigidity are also found.

Tumours of the pineal gland, pons, cerebellum, medulla and mid-brain—These have their own neurologic syndromes associated with papilloedema which is bilateral, nystagmus, contracted fields, extraocular palsies, and anaesthesia of the cornea. The last is in case of tumours of cerebellopontine angle.

Pituitary tumours—The chromophobe adenomas constitute the largest group of these tumours. The most common complaint is impaired vision, headache and diplopia. Other visual disturbances resulting from pressure upon optic chiasma and nerve are exceedingly common. The adenomas usually extend upwards and backwards between the optic nerves and under the chiasma, thus producing typical bitemporal hemianopia with optic atrophy. We know that as the tumour grows extending laterally under the optic nerves and vessels, and grows upwards and then over the chiasma under the temporal lobe or into the third ventricle, blocking the foramen of Munro, it gives rise to increased intracranial pressure, internal hydrocephalus, papilloedema, amaurosis, or loss of vision in the nasal fields.

Papilloedema in children with adipose genital dystrophy is indicative of a craniopharyngioma. There is one more condition which I would like to mention in connection with raised intracranial pressure. It is a condition of:

Papilloedema with running of the nose—The fluid escaping through the nose is cerebrospinal fluid, and contains a substance that reduces Fehling's solution. There is constant headache with papilloedema, giddiness and running of the nose. The latter is very annoying. The cause is attributed to internal hydrocephalus with minute leakage in cribriform plate, and abnormal communication between cerebral and nasal lymphatics. The amount of fluid coming out of the nose has varied from few drops to several ounces.

Lastly, there are visual hallucinations, as in temporal and occipital lobe tumours and visual agnosias which when studied carefully would reveal correctly location of the lesions.

I feel with Adson, that it is essential to re-emphasize the importance of an early diagnosis of brain tumour, since it is evident enough to all physicians what disastrous results it produces. I believe that the attending physician is responsible if the condition is allowed to attain a severe height. The patient should be given a thorough examination and consequently an opportunity for early treatment.

Summary

The disuse of potent knowledge of ophthalmology which is made by the general practitioner, is deplored. Ophthalmology can help exceedingly in diagnosis and localization of intracranial lesions, by reading with the ophthalmoscope and the perimeter signs of raised intracranial pressure.

The causes and general symptoms of increased intracranial pressure are discussed with special reference to ocular symptoms. The most prominent and important optic neuritis, œdema of retina, subretinal hæmorrhage and condition of blood vessels are described.

The affections of the extraocular muscles innervation and the pupillary changes, as also the variety of defects in the visual peripheral fields all of which show pathological alterations from normal are discussed.

The various conditions and lesions causing a pathological rise in intracranial pressure, are discussed with the characteristic ocular findings in each of them.

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SPECIAL ARTICLE

SOCIETY MEDICINE AND NATIONAL WELFARE

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(*Continued from previous issue*)

I have already discussed the history and evolution of society and medicine and showed their close relationship with human welfare. How the Greeks developed rational medicine, how with the spread of Christianity, the social position of the sick man changed, and he was no longer considered as one to be shunned by his fellowmen, but was looked after and cared for by others. In the early days of Christianity, Christian medicine was faith healing, until later the Greek rational therapy gained superiority. Then with the advent of the industrial era, preventive and socialistic medicine came to the forefront and today the effort of medicine is to provide a service for all irrespective of their paying capacity.

Now I propose to discuss the present medical situation in the country. As it is intimately connected with economic and sociological factors, this will be dealt with under the following three main heads,

(*a*) The burden of sickness. To give you an idea of the immensity of loss due to sickness.

(*b*) Forces acting against provision of adequate medical relief.

(*c*) How to overcome these difficulties.

(*a*) THE BURDEN OF SICKNESS—The need for health cannot be measured by deaths alone. To obtain a better idea it is necessary to explore the amount and kind of impairment, disability and physical defects with which the people are burdened and which materially affect their working efficiency leading to poverty and further disease.

The most extensive study of illness ever made in the United States, discloses that both the frequency and duration of illness bear a striking relation to income. Rural poverty is one of the causes of the higher incidence of illness in rural areas.

It is very difficult to estimate the economic loss due to sickness as no reliable figures are available for India. In the United States it was estimated that the annual loss due to sickness was 13 days per person, 42% of which was preventable and such prevention would extend the average life by 15 years. This was in 1909. Then they took vigorous measures to prevent illness in industries, etc and in 1932, the annual rate of illness was 8·9 days per person per year. Taking 8 days as the average illness annually per person, it has been estimated that the economic loss from preventable diseases and death is 1,800,000,000 dollars per year. If the crippling effects of disease are taken into consideration, it would be much higher. In Great Britain, the loss of production due to absenteeism through sickness, costs the country £300 million a year, much of which is preventable. The All India Institute of Hygiene carried out a Health Survey of Singur area in Bengal in 1944. Their findings are interesting and offer useful guidance to the health conditions of a sample of the rural people of India. These findings will be quoted occasionally hereafter and will be referred to as the Singur Survey.

Total area of survey—32·98 sq. miles.
Population—63,000.
Per capita income—Rs. 165/- (reduced to prewar figures works out at Rs. 68·8).

In the Singur area taking average daily wage at annas 8 per day, the area suffers an annual loss of 1,16,810 rupees from preventable diseases.

Individual sickness is a cost levied in some way or other upon the society at large. The fact first became evident with the discovery of mechanisms by which contagious diseases are transmitted. More recently social costs of malnutrition, particularly in case of children have become a public concern. Underfed and under-nourished children grow up to be inefficient adults, and so they have to be subsidised by the society at large, directly or indirectly, and as such, are a drag on the society. If society spends this subsidy for getting healthy adults by feeding the growing children properly, it will have healthy adults, who will not be a drag on society, but useful members, and asset to the state.

The working efficiency of the Indian worker is practically 50% of other workers. This is mainly due to malnutrition and effects of chronic illness like malaria, hook-work disease etc. In a Japanese mill, 18 operatives look after 1000 spindles. In India 30-31 operatives are required for the same purpose. 48 men are required to look after 100 looms in Japan, whereas in India 89 are employed. In jute industry one foreign worker in Dundee or the continent does the work that required the services of two operatives in India. This was before the war when there was no apparent scarcity of food. Now with further scarcity of food the actual efficiency will be much less.

In the prepartition India, the amount of grain available for food was calculated to be about 48 million tons, as compared with 81 million tons required for the population. In other words food consumption fell short of the needed consumption by more than a third. The per capita food consumed by the masses, is even less than the prison ration. With starvation there is disease and inefficiency. The estimated requirement in 1951 is 46·1 million tons, at 16 oz. per adult per day for 358·9 million population (by 1951). The estimated deficit at the present production rate will be 4·4 million tons. (Figures supplied by Ministry of Food).

An enquiry under Megaw showed that only 39% of the people were adequately nourished, 41% poorly and 20% very badly nourished. In the Singur survey —clinically recognisable malnutrition was widely prevalent, 43% of the population being generally ill nourished, 28% deficient in vitamin A, 10% in vitamin D, 7% in B_2 and 1% each in B_1 and C, 39% suffering from iron deficiency.

The entire rural population and 70% of the population of Bengal suffer from hook-worm disease. In other provinces also it is very prevalent. Apart from hook-worm, the commonest disease from which

every one has suffered sometime or other, is malaria. Besides malaria there are universally prevalent deficiency diseases due to inadequate and insufficient diet, rickets claiming 2·3 million, night blindness 6·3 million, tuberculosis 5 million.

The ultimate effect of ill health arising form starvation and disease, is inefficiency so far as land or factory labour is concerned. The vicious circle of disease, inefficiency and poverty goes on and on. The greatest bugbear of modern civilisation is poverty. In an uncivilised society, poverty does not mean much, but with civilization it is the greatest demoralising factor, directly causing illness, bad health and destruction. It is difficult to mention any field in which health is not significant, but unfortunately our economists and politicians are turning their blind eyes on it. It is well established that there is a close relationship between low morals and poor health, ultimately leading to poverty.

The poor are in greater need and receive less medical services, and as a whole the poorer rural people contribute more to the coffers of the state. The population of India which has been variously estimated as 70%-90% is in the villages and the economy of India is primarily agricultural. In all the recent schemes of medical care the rural people have received the least attention, and there is practically no medical service for them. Whatever has been done has been done piecemeal, without proper planning, and without taking into consideration the distribution of population, and their economic conditions and limitations. It is at present in a chaotic state, and the confused thinking on the part of wellmeaning leaders will be evident from an example.

In the Bombay province, first of all, dispensaries were subsidised. Then the scheme of subsidised medical practitioners introduced. When that failed, the Village Aid Scheme came in. In this 400-500 teachers are provided with first aid boxes and a medicine chest, and a short course on the use of medicine. Lately the Govt. is evolving another one—the Sub-dispensers Scheme—in which the social workers will be given an allowance of Rs. 10/- a month and a medicine chest. They would go to the village for their social work and medical treatment as well. In no country would such a downward trend of medicine be tolerated. Never has medicine been insulted to this unsufferable degree. Only in this country can humanity be treated in such a degrading manner. If you cannot give even a moderate medical service, it is better not to give any, than to cheat the people and give them false consolations. These inefficient and half-hearted measures have brought modern medicine more into disrepute than anything else. Now they are on their way to start mobile medical and surgical units. They will work in one place for three weeks and then move on. The Hon'ble minister is said to be very enthusiastic about it. If disease and death came in accordance with the Hon'ble minister's schedule, it would be a splendid scheme. However, we hope it will be run by qualified people. All this show that there is enthusiasm, but hardly any efficient scheme with economic backing that can be successfully put into practice.

FORCES ACTING AGAINST PROVISION OF EFFICIENT MEDICAL RELIEF—Now let us consider the various forces that are acting against the organisatoin and provision of efficient medical relief in the country. These are,—

1. Economic condition of the people.
2. Lack of education and love of *laissez faire*.
3. Encouragement of Quackery.
4. Quality of scientific medicine practised in India.
5. Inaction of the part of the people, profession and state.
6. Socialistic backwardness of the people.
7. The latest menace.

1. *Economic Condition*—To realise the immensity and insurmountable difficulty of the problems involved, an idea of the economic condition and purchasing power of the average Indian is given below.

The economy of India is of course primarily agricultural. Land which supports nearly three-fourths of the population is the foundation of India's national wealth. Agriculture despite its predominance in the country's occupational distribution, contributes only Rs. 6,000 million or 38%, whereas industry in which 15% of the total workers are employed, contributes Rs. 3,000 or 19% to India's national income; even services (including trade, transport, government and domestic) in which 13% of the total workers are employed, amount to Rs. 4,000 or 23% of the total income. The income per worker in services is Rs. 307, in industry Rs. 195 and in agriculture Rs. 133.

Agriculture in India is a deficit economy for the following reasons:

(*i*) Pressure of the growing population on the land and increase of landless labourers. Available figures for occupational distribution, show there is a persistent tendency towards increased dependence on agriculture. This has led to the emergence of a class of landless labourers estimated to be 34m. in 1941.

(*ii*) Growth of indebtedness—In the united Punjab, one of the most prosperous provinces in the prepartition days, only 17% were free from debt. Average debt per indebted proprietor was Rs. 463. The total rural indebtedness represented twelve times the land revenue paid by all concerned whether in debt or not.

(*iii*) Subdivision and fragmentation of holdings. The average Indian holding is 5 acres, compared to U.S.A. 145 acres, Danemark 40, England 20. The Indian holdings are not only small, but they are scattered over a wide area, resulting in waste of time and labour.

(*iv*) Decline of indigenous handicrafts and lack of subsidiary occupation.

(*v*) Easy but very expensive credit available.

(*vi*) Disorderly marketing.

The low income from agriculture is the major cause of India's general poverty. The per capita annual income of India has been estimated to be Rs. 62. Not only is the income low, but its distribution also is highly uneven. The condition of the majority is therefore much worse than is indicated by the above figure of per capita income. Among the urban classes nearly 50% of the total income is concentrated in the hands of 10% of what the total income figures would indicate. Inequality between rural and urban income is still more glaring.

It is obvious that relatively to other countries, as well as in terms of absolute necessities of civilised life, our national income is far too low. This was about 1940. The per capita income for 1948-49 for the Indian Union was Rs. 180 and that of the agriculturist Rs. 148/-.

The close relationship between per capita income and public health, is too obvious to need explanation. The root cause of the poor physical condition of the people is their low purchasing power, and the two react upon each other to a marked degree in India. As a result of under-nourishment and inadequate medical aid, 65% of the persons born die before they reach the age of 30, and about 45% before their 10th year. These figures have another very important bearing on the economics of the country. Up to the age of 20 money and energy are being spent on the education and training of the person, and if he dies after that, about the age of thirty, the average expectation life of an Indian, all that money, energy and training are wasted. The expectation of life in America, England, New Zealand, Australia is 60-65 whereas it is only 27 in India. No doubt this is mostly due to high infantile mortality, but the facts remain the same. There is no question that the vitality of the people is low, and so when there is epidemic or famine it wipes off most of the population of the area. Malaria by its direct or indirect effects causes annually 2 million deaths, and tuberculosis which is essentially a disease of poverty, accounts for another half a million a year.

This is disastrous, not only because of waste of life, much of which could be prevented, but the more important fact that it incapacitates for work and reduces economic efficiency. The dead person is dead and gone, but the incapacitated person is a liability of the society, and an economic burden. In India the annual number of preventable deaths, which result from preventable diseases is between 5-6 million. The average number of days lost to labour by each person in India is 21 days a year (8-9 days in U.S.A. and Britain). The percentage loss of efficiency of the average person in India is not less than 20. The percentage of the infants born in India who reach a wage-earning age is about 50; whereas it is possible to raise this to 80-90. Malaria, hook-worm disease and deficiency diseases insidiously reduce labour efficiency. The wastage of life and efficiency which results from these preventable diseases costs India several hundreds of crores of rupees per year. Malaria alone is estimated to cause an economic loss of 10·60 crores annually on account of the diminished earning capacity of the workers.

A strong and efficient public health service will therefore materially help to raise the economic condition of the people.

On Medicine and Public Health, Britain was spending 22·7% of revenue (before the introduction of the National Health Service). India's expenditure on this head is 8·4% of the revenue (1939-40). The figures for the various provinces are as under:

Province	*Year*	*% of total expenditure*	*Per capita expenditure*
		Rs.	Rs. A. P.
Bombay	1938-39	6	0 6 0
	1949-50	7	1 6 0
West Bengal ..	1938-39	8	0 3 0
	1949-50	13	1 15 0
U. P.	1938-39	5	0 2 0
	1949-50	6	0 9 0
Madras	1938-39	8	0 4 0
	1949-50	6	0 11 0
East Punjab ..	1938-39	6	0 4 0
	1949-50	3	0 9 0
C. P. & Berar ..	1938-39	5	0 2 0
	1949-50	5	0 8 0
Bihar	1938-39	7	0 2 0
	1949-50	10	0 8 0
Assam	1938-39	8	0 4 0
	1949-50	8	0 15 0
Orissa	1938-39	6	0 2 0
	1949-50	7	0 10 0

(*Eastern Economist, May 27, 1949*)

If the state sincerely wishes to help the people, some feasible scheme must be evolved. In doing this one has to take into cognizance, whether we like it or not, whether it is palatable or not, the following facts:

(*i*) The average villager is incapable of paying for the heavy expenses of medical care.

(*ii*) The M.B.B.S. graduate will not settle in villages unless and until he gets a return large enough for his services to maintain himself in the way he is used to.

(*iii*) It is stupid of politicians to expect that medical men will settle in villages and sacrifice their whole life and career and lead the life of an ascetic renouncing all worldly amenities.

(*iv*) So far as prevention of disease, protection of health, and efficient medical care is concerned, it does not matter whether the politician gives our people Voodoo, or Vedic medicine, or any other cult, if scientific medical care is denied.

The main obstacle is money. No scheme of medical relief which can be of any use to the people can be successful without adequate finance behind it. It must come either from the people or from the state. The people (unless an efficient system is contrived) cannot pay for it, so state help is essential. The scheme must be such that efficient medical care is available, irrespective of the paying capacity of the sick person concerned.

2. *Lack of education and love of laissez faire*— For any social service to be successful, you must

have the co-operation of the people who are to benefit from it. Education is essential for obtaining this intelligent co-operation and support of the people. We must realise that education is not mere transfer of information from one person to another, but it is a manifold process by which a person knows how to operate under his own will and power. The control of various units whose actions depend on the individual, can be brought about only by a true understanding of facts. Not only understanding, but conviction of the truth, and acceptance of responsibility by the individual for the society.

From the standpoint of public health, there is much that can be done for the public, but there are many more things that the public can do for themselves. How much the public will do, will depend on how much they know; but quite a good bit of what they do know, they very seldom carry out in practice. It is inevitable that we will drag along a considerable remnant of the past and obsolete ideas, and superstitions of old fears and inhibitions, but with spread of health education, this residue need not be controlling.

In matters of public health, there is a remarkable combination of facts struggling against prejudice. One cannot compromise in this field, unless you make facts the basis. We know how disease originates and spreads, we know the facts perfectly well, and yet in our community, even among the so-called educated classes, there are people who go by opinion and prejudice, rather than facts. If preventable diseases are not prevented, in most cases the blame lies more with lack of organisation, and to a lesser extent on funds, than lack of knowledge.

Complacency and *laissez faire* are our national characteristics. What was good for our forefathers is good for us. This attitude of complacency and fatalistic view of life, are the main causes of stagnation in our national life.

Medical science has nearly solved the problem of health, but its application to the masses of the country is our main difficulty. Health must be an individual or social asset capable of development and protection. The permanent importance of health for adequate discharge of public and private duties, can escape no one. The nation with the best human stock and largest store of health will win world's prizes. Greatest results may be obtained by making known health laws a part of the legislation which controls our common life together, but as elsewhere there must be education of the people to gain their support and cooperation.

3. *Encouragement of Quackery*—Quackery in some form or other is present in all countries irrespective of scientific progress and modernisation. It is intimately connected with the psychological content of the human mind, but whereas in all modern countries it takes a very minor place in the programme of medical services for the people, in this ancient land of ours, for multifarious reasons, it has a great hold on the people, and the politician is taking fullest advantage of this to enhance his own ends in the name of patriotism and culture.

The reasons why the quack flourishes in this country are:

(*a*) Economic condition—It is cheap and easily procurable. But it need be realised that properly prepared indigenous medicines are neither cheap nor easily procurable. It is the half backed village Vaid that is cheap, and the drugs prepared by him are also of doubltful value.

(*b*) Lack of education—No attempt has yet been made to eradicate the superstitions and false ideas regarding quackery; rather they have been encouraged under the pretence of tradition and patriotism. Even a so-called educated person in our country has got exactly the same convictions regarding charms, magic and supernatural phenomena as the less educated ones. The whole system of education needs, to be changed, and people must be given rational ideas so that they may have the courage to accept the truth.

(*c*) Psychological.

(*i*) We have been brought up with the idea and it has been ingrained in us from the very childhood, that these drugs suit the people of the country better. In this matter we make no distinction between knowledge and belief. Because men do not distinguish categorically between what they believe and what they know, they may act just as confidently upon the basis of belief as on the basis of knowledge. The distinguishing between knowledge and belief is peculiar to the modern world. It reflects one of the few truly unique attributes of contemporary societies—the considerable use and dependance on science, which endeavours to separate knowledge from belief and to extend the area of knowledge at the expense of belief. Knowledge may be defined as verified facts. Here we are being carried away by hereditary beliefs against proved facts.

Experience has demonstrated that men are creatures of belief rather than knowledge, creatures, of habit rather than reason, and what the individual learns at home or from his associates or society have more influence on his behaviour than have the facts that he has been told in the school room.

(*ii*) Prejudice—It means prejudgment, the making of a decision, or adoption of an attitude or belief, in advance. It is the perversion of rational judgment by self interest or group interest. Crawshay-Williams says that it is most striking when the strata of classes are changing, as is happening at the present moment, when one group is threatening another for power and prestige. It is particularly effective because it carries with it strong feeling-emotion tone.

(*iii*) Religious—The indigenous system has got strong association with our religion and philosophy, and as such people think that it would be sacrilege to denounce this. Moreover as the system is closely associated with gods, demi-gods and saints, and specially being a part of our great religious book, the Vedas, it has a strong religious appeal.

(*iv*) Culture—It is intimately connected with our old culture and civilization, and a part of our past glory at a time when most of the world was in darkness. Naturally people think that it would be disloyalty to our culture to give it up and so they are clinging to it.

(*v*) The reaction to foreign domination for ages, is expressing itself in a very acute form now. The

scientific or the western system of medicine as it is called, is considered a part of that foreign domination and as such detested by the people. This hypersensitivity of the masses is being fanned by the politician and other interested persons for their own benefit. They are virtually exploiting the situation.

(*iv*) Irritional thinking—The religious, cultural and patriotic sentiments induce one to think irrationally—the pleasure-pain principle of psychology—we tend to want to do things which satisfy our instinctive desires and to avoid things that run counter to these desires. In the majority of cases the desire takes the form of a wish to believe something. This wish to believe something, is in turn motivated either by the fact that a pleasurable emotion will accompany the belief, or avoid the experience of an unpleasant emotion.

These sentiments are also associated with certain other desires which lead one to irrationality of thinking and judgment, for example the desire to feel good. By conceding to these sentiments, one has the feeling that he is obtaining the herd's good opinion. The other is the desire to conform. This desire is fundamentally unreasonable in that it impels us to adopt opinions without evidence, merely because they are prevalent among the community in which we live. In times of danger to the community, as in the present state, the whole tendency to conformity is greatly strengthened and it prevents the acceptance of new idea irrespective of whether it is good or bad. This impulse to conform is sufficiently powerful to make a large number of people accept opinions in deliberate opposition to evidence; exactly what is happening now.

The adoption of 'comfortable concept', is naturally greatest when it will help us to believe something that we would like to believe, for example, our system is the best.

Another psychological truth is that man finds no difficulty in holding contradictory opinions and in allowing sharp cleavages between their principle and practice. It is happening everyday; the politician ignoring his reason, sacrificing the people and the country, encouraging the quacks in his public life, but running to the nearest good doctor when it concerns himself or his family—such dishonesty.

4. *Quality of scientific medicine as practised in India*—Owing to various reasons the standard of medical work is not high as compared to the same in other countries. Unless and until we can prove to the people the superiority of our knowledge, method and skill by the results achieved, we cannot expect them to accept our methods. The fault mainly lies in the system, custom and facilities available to the doctor. The main reasons being

(*i*) Inadequacy of hospital service, laboratory service and specialist service.

(*ii*) Proper scientific diagnosis is not possible for most private practitioners, so the treatment depends on a lot of guess work and the results much on luck.

(*iii*) For obvious reasons the doctor often has to adopt the cheapest means of cure, which usually is not the best.

(*iv*) Very seldom the patient comes to the qualified doctor in the early stages of the disease, when it is easy to cure.

In the Singur survey it was found that aversion to western medicine among the rural population was a minor cause of not requisitioning scientific medical aid. The most important reason was frustration arising out of failure of the qualified practitioners to give relief to the patients. Many of these dissatisfied cases are driven to seek relief from unqualified practitioners. An allied cause was the lack of confidence in the local dispensary, which accounted for one-third of the people not seeking aid in the dispensary. Frustration and lack of confidence together explained 54% of the patients not attending the dispensary. The dispensary provided rudimentary outdoor treatment to only 1/36 of the total sick, although it could take care of double that number, if it were sufficiently popular.

5. *Inaction on the part of the profession and the State*—It is only recently that the Indian Medical Association is giving some thought to the problems of medical relief in the country. Unfortunately the efforts of this body has been negatived by economic conditions and the attitude of the present day government to support and encourage indigenous medicine, irrespective of its efficacy.

Apart from financial reasons the policy of the government in these matters has been most haphazard. There is hardly any coordination between the centre and the provinces. The provinces do as the dominant party interests consider suitable during its regime.

The funds available for health purposes are most inadequate. As has already been shown while many other departments are very well off the medical department—the most essential for the health and happiness of the people of the country—the budget provisions are most inadequate.

6. *Socialistic backwardness of the people*—The attitude of the people is more individualistic than sociological. Sociologic understanding of the human society is essential for improvement of human living. It is only by co-operation and division of labour that man can hope to obtain that material control over nature which will enable him to develop his potentialities in the physical world. Society is the process by which human beings establish wider relationships with one another, more fully realise the meaning of society and act in a manner which is the outcome of their sense of responsibility to one another. Society is a process rather than a thing; it is not the end of existence but the means of living together—a system.

7. *The latest menace*—The recommendations of the Committee of Indigenous Systems of Medicine 1948 (Chopra Committee) is the last straw on the camel's back. The committee has given its sanction to the indigenous systems to be treated on the same terms as the scientific system.

In the recommendations of the committee, there are several matters which if carried into effect, will put the clock of the country back by centuries to the medieval ages. Some of the recommendations are contradictory to the opinions expressed by Sir Ram Nath Chopra in his earlier reports, although no substantial discovery has been made in the mean time. Of the

various factors dealt with, I specially like to draw attention to the following:

(*a*) Hardly any substantial facts and figures or argument have been presented to substantiate the actual value of the indigenous systems. What has been given is mostly sentimental reasons (beliefs) and quotations from old books as authority, and *opinions* of some of the old masters.

(*a*) All the arguments put forward in favour of the indigenous systems seem to be too wooly, while the evidence against them hardly received any consideration of the Committee.

(*c*) One recommendation of the Committee is to train the indigenous practitioners for Public Health and preventive work. The average village *Vaid* has hardly any education. For preventive work, one must have a certain amount of education and a wider outlook in life than can be expected of the village *Vaid*. He must have an intelligent understanding of his work to be able to convince others. The average indigenous practitioner would be most unsuitable for the purpose and will only bring discredit and disrepute to the system, as his learning and reasoning will be incompatible with the modern knowledge of preventive medicine.

C. How to Overcome These Difficulties—Now what is the answer to these problems. There is no sense reiterating our difficulties, if we have no remedy for them. The remedy is there, but as drastic medicine is required to check fell disease, so drastic and revolutionary measures are necessary to bring the society into vitality and life. Let us deal with these factors categorically and see what can be done.

1. The Economic condition.

(*a*) The Government have already got huge projects and other matters in hand to improve the economic condition of the people. Once they are put into action, the condition of the people and their purchasing power will improve.

(b) Better agricultural methods, so that the average man produces more, and better marketing system to enable him to get a little more than what he is getting now.

(*c*) Consolidation of holdings.

(*d*) Opening up of other industries, large and small to relieve the pressure on the land.

(*e*) Prevention of disease and malnutrition, so that the efficiency of the average working person is increased and thereby his income enhanced and he spends less on curative medicine.

(*f*) From the facts mentioned, it may be argued that it is more or less impossible to provide a workable medical service in the rural areas. The economic condition is a man-made condition, it did not come from heaven. If man can make it, he can also unmake or undo it, and I an convinced that given the co-operation and good will of all concerned, it is not impossible.

In the Singur Survey, the per capita income (in 1944) was Rs. 165. Of the consumable expenses, food cost Rs. 148. Out of this income Rs. 2|8|- per capita was spent on medical services. The dispensary in the area was costing annas -|2|6 per capita (spent by the state or local body). So the total per capita expenditure for medical relief was Rs. 2/10/6.

"The per capita income of the United States is about 22 times that of India and that of Great Britain about 17 times....After making allowance for the low national income of our country as compared with those of Great Britain and United States, the rate of expenditure on medical and public services in India should be Rs. 3-3-0 per head of the population in order to reach the level of similar expenditure in Great Britain in 1934-35 and about Rs. 2-5-0 to reach that of the United States in 1938. Our (Bhore Committee) proposals involve, during the first 10 years of their execution, an anticipated expenditure of Rs. 1-14-0 per head of the population."—Bhore Committee Report —Vol. IV. Para 334, 336.

It has not been found possible to implement the Bhore Committee recommendations due to financial reasons. But if we could only stimulate public opinion to contribute the quota they are individually spending for their own medical needs, and pool these resources together, we will be in a position to work this. The only obstacle, and it is unsurmountable, is the individualistic and not socialistic, idea of the people. If we could only convince them that they can have a serviceable medical scheme through a socialistic conception of medicine, the work will be feasible. The government should try to work on these lines, so that a contributory medical service can be built up.

The National Health Service of Britain, a newly introduced all-purpose medical relief for everybody is costing them over 352 million pounds a year. Every worker pays £0-2-6 per week per head, and the same amount is paid by the employee. A very large part of the total costs was previously paid in hospital charges and private fees, and so it represents a redistribution of national spending, and not a new strain on the economy. Instead of the individual spending for his medical costs himself, he is contributing it to the state, who is in a better position to organise the medical relief for all. This expenditure also includes the costs for public health and for prevention of illness.

I had an opportunity of discussing our problems with Arthur Morgan, an ex-chairman of the T.V.A., who was on the University Commission. He made a special study of the Indian rural and other problems, and already being an experienced hand in the T.V. Administration, his opinion is worth noting. His considered opinion was that the only solution for the rural people for a modern life is re-grouping of the villages in India. That is people from 4-5 villages living in a modern built up area, with agricultural land round it. Apparently this sounds impracticable, but any one who has had a look at the new colonies built up by refugees, *e.g.*, Nilokheri, Jawanabad can be disillusioned of this. Our people are capable of doing this, only if they can be convinced of their utility. If re-grouping can be carried out, modern sanitary and medical amenities can be provided. In Nilokheri they are preparing everything they need in their own workshop.

He agreed with me that the quality of the graduate doctor must not be lowered, as a matter of

fact we agreed that the quality needs improvement. But as the graduate doctor will not, or more appropriately cannot go to the village, a class of sub-doctors has to be provided. They may be called Feldshers, Health-aiders, Health protectors or by any other epithet, but not doctor. Their main work will be preventive and instructive. Their training will be for three years after matric., with the main object of making him a good citizen and health worker. The curriculum may be as under,

FIRST YEAR—Anatomy. Only essentials. No dissection but seeing parts dissected by M.B.B.S. students.
Physiology—From the point of biology and only elementary.
Pharmacology—20-25 main drugs.
Chemistry—Elementary.

SECOND YEAR—Hygiene and Public Health, of the same standard as the M.B.B.S.
Pathology—Essentials only.
Midwifery—Normal and abnormal labour.

THIRD YEAR—Medicine and Surgery.

CLINICAL TRAINING—2 year. 6 months medicine. 6 months surgery including eye, ear, nose and throat and 6 months midwifery.

His work will be prevention of diseases and protection of health and to treat only minor ailments and to be of use in cases of emergency, and sending others to the nearest medical unit. One such medical man for 5-6 villages. A small rural hospital with 10-40 beds for about 10-20 such units under a graduate with laboratory, x-ray and anaesthetic facilities.

The available methods of medical relief in rural areas are:

(*i*) Some maintained by Local bodies and State.

(*ii*) Subsidised dispensaries—People contribute a sum and the balance is met by the state or local body.

(*iii*) Some form of contributory service *e.g.*, co-operative medical societies.

(*iv*) Travelling dispensaries.

In urban areas there are enough doctors to look after the people. Most of our medical budget is spent in urban places. To educate our people in health matters and to afford a fairly efficient medical service, we must concentrate our activities to rural areas. More than 75% of the people are there, so more and vastly more need be spent for the rural areas.

In the urban areas, the government are on their way to start the Industrial Workers' Insurance. Others may easily purchase the medical service they need. If capable people are attached to hospitals as honorary workers, government may be able to save some money, as well as the practitioners will have an institution where they can treat their patients better. Medical science is daily becoming so vast that the average practitioner cannot do justice to his patient. So 'group practice', where several doctors work together, one in each branch of medicine, and can have the benefit of each other's knowledge and skill, is becoming more and more popular.

2. *Education.*

It is essential for progress for the people to distinguish between belief and knowledge. This can only be done by education. Once the people are convinced of the efficiency of modern medicine, they themselves will ask for it. In the Singur survey it was found that education increases the recognition and appreciation of scientific medicine.

Education should be directed to attain:

(*a*) General education which will make people get rid of beliefs and superstitions and have more faith on facts and knowledge.

(*b*) Education on Health Matters—personal hygiene, prevention of disease and protection of health.

(*c*) Sociological—Evolution of health practice in a democratic society largely depends on how people think and how they react to outside suggestions. They must be brought up with the idea that socialistic life is becoming more and more essential for human happiness and must develop community welfare sense for organisation of medical services.

As more and more success is achieved in arousing the people from morbid inactivity, they should be further educated to the ideas of self-help and to the need of co-operative community efforts without which medical relief cannot succeed.

3. *Encouragement of Quackery.*

Politics must be dissociated from service to humanity. Proved facts must be the basis of our action and our people have to be educated to their acceptance. India is a land of incongruities, but this has been carried to absurdity in the field of medicine. Here we are asking the World Health Organisation to help us say in the control of venereal diseases, and we have proof that in this field modern medicine has achieved the greatest success, still our people are being encouraged to be treated by quacks. One feels ashamed when talking to these W.H.O. officials that we are asking them to help us, but we are not prepared to help ourselves and protect the community by legislation against advertisement of quack remedies or treatment by them, rather on the contrary it is being legalised. Due to obvious reasons, venereal disease is the field where the quack flourishes most and does utmost harm to the individual and to the society. It is because of this that I made special mention of this.

4. *Better Technical Service.*

We must improve our technical ability and prove by our results that the scientific system is better.

About our graduates I have nothing to say. They are as good as in any other part of the world, but they devote more of their time and energy in theoretical matters; and this is primarily due to defective system of examination. When they go to practise, they have to re-learn the practical aspect of medicine. This and certain other factors, as already enumerated, are the reasons why the standard of service is not as high as in other countries.

There is hardly any facility for post-graduate training. There should be three types of post-graduate education, suitable to three different classes of people. Post-graduate classes should be separate from the under-graduate, with definite pre-arranged programme.

1. For the newly qualified doctor to train him for actual practice—About three months' course.

2. The prospective M.D., M.S. and other specialities.

3. For the general practitioner—Six weeks' course or even an intensive 3 weeks' course.

(*b*) Medical Practice—The practitioner in outlying places must have the recourse to laboratory, x-ray and consultation facilities, which should be given by state medical officers free to the indigent. This can only be afforded by establishing small well-equipped institutions in outlying places.

(*c*) Medical Committees—Whenever the government form any committee to advise them on medical matters, only the big specialists and monied practitioners of the metropolis, who have neither any experience of the poor sick nor the environmental conditions of the rural people, are chosen. The general practitioner who is actually responsible for medical relief in the country, hardly ever finds a place in it, and far less those who have experience, administrative and otherwise, of rural medical relief. Consequently whatever is recommended by these people have seldom anything to do with the practical side of medical relief in India and more often than not, the recommendations are impracticable in actual life and the report is shelved.

In all these matters the experienced general practitioner and people with experience of rural mdical relief need be included.

5. *Consideration for the person giving the service.*

People must realise that if they want good and efficient medical service, they must see that the person rendering the service is adequately remunerated. Medical education is lengthy, expensive and strenuous, and only the children of economically well off parents can afford it. If they are not assured of a reasonably comfortable life, very few will go into the medical profession, just because of high idcals. At the present time the prospect in the medical profession is very poor compared with other openings available. Moreover, the life is hard, and full of grave responsibility in every moment of it. The average expectation of life of a doctor is 10 years less than in any other profession (U.S.A. average expectation 62-63 years, for the doctor about 50 years), in spite of his expert knowledge. So unless the people are prepared to remunerate the doctor adequately, able people will not be attracted to the profession. Some leaders are threatening that they will conscript the service of the doctors. I hope better sense will prevail; because they may, due to the unlimited power to them, very well misuse it, and force it, but there will be no qualified doctor in the country in the next generation. Already doctors are not anxious to send their children in the medical profession as they realise that the prospects are not bright. Compared to other branches of service, his pay is less, and unless he is at the top of the profession, the income of a doctor is less than the average of his class with equal education and training. So far as I can judge there is not so much desire for joining the medical profession by the better quality students, and I know at least of half dozen instances where students left medical college for other jobs. The main reason being that the economical and other prospects are not so bright, apart from other channels (of career) being open to them. Moreover the social status of a doctor in this country is much lower than say one in the administrative or even police service. Here he is just one whose services can be bought for the fees paid. The head of the medical department, who has been dealing with medical matters all his life, is under the control and guidance of an administrative officer with hardly any idea of medical matters. Naturally people are not being attracted to the profession, certainly not the more intelligent and capable stock, who alone can have the initiative. In all other countries the remuneration of the doctor is no less than any other branch of government service, and he is certainly respected more. To-day under the popular government, with a constituency most of whom are irresponsible and many of whom are trouble-mongers, the work of the administrative medical officer of an institution has become more difficult than ever before. The complaint against a medical officer is easy, but no one has ever heard the authorities taking any action against false or mischievous complaints. Such is the position to-day.

To attract better people for the medical service, the medical man must be assured of better prospects and equitable financial return.

6. *Social Medicine.*

Social medicine is the study of those environmental factors which affect health, and the application of that study to the benefit of man. It has two main applications: (*i*) the use of this knowledge for the benefit of the individual both in health and disease: this is a responsibility not only of the physician and surgeon but of each individual. (*ii*) The use of this knowledge on a community basis: this is a responsibility of the community and has been known as public health or State Medicine.

The term environment is used here in the very widest sense to include not only the physical and social environment but also the study of heredity and genetics and their effect upon human health:

To afford a good medical service, we must recognise the patient as a member of a family and as a unit in the wider social organisation, and not merely a heap of tissues covered with skin. Disease has disabled him from his usual life, and he has to be helped in rehabilitation. His social circumstances may be the cause of his disease, and as far as possible, with state help if available, this has to be tackled. More attention must be given to the importance of improving man's health by attacking the environmental causes of disease.

To-day we realise that the disease processes can be initiated not only be adverse factors in the purely physical environment, but also by adverse factors in the social environment. With the growth of civilization and urbanization the technicalities of life have become more and more complicated. The factors which

make for a healthy social environment are becoming more difficult to obtain. In the troubled times in which we live, it is a small wonder that the psychosomatic diseases have increased in prevalence.

Social medicine is becoming a part of students' training in many universities. In Great Britain already three universities have created chairs of Professor of Social Medicine. In America many universities have included it in the ordinary curriculum. The object is to develop an appreciation of

(*a*) Practice of medicine is not merely treatment of the sick man, but the care of sick persons.

(*b*) The every-day circumstances of life play an important role in creating illness.

(*c*) Illness and its accompanying problems often disrupt normal existence.

(*d*) Consideration of social factor is therefore an inseparable part of the process of diagnosis and treatment.

Every senior student in the ward is made to study the social condition of the patient, and this is discussed by the social worker attached to the hospital and the resident medical officer. In some schools home visits and field work are also included. In America the Course in Medical Social Work consists of two years' course for the Master's degree.

Although it is impossible to implement the recommendations of such study for the average patient in this country, it shows the trend of modern medicine, and how to attack the root cause of disease. This is the way modern medicine is moving, while in this country we are asking our people to look back and stick to the heavenly portions discovered by our ancestors.

7. *Production of Drugs.*

Most of the drugs and chemicals used in medicine have to be imported from outside. If these can be produced in the country the cost would be much less. Moreover, a vast amount of money is going out of the country in buying medicine. India abounds in raw materials, and the climatic conditions are so different in different parts of the country, that we can grow anything from Alpine to tropical vegetation. Therefore every effort must be made, with state help if necessary, to produce the main drugs in India. The government have already in their hands schemes for the manufacture of penicillin, sulpha drugs and paludrine in the country. Now with the changed dollar position, more of our money will go out to buy the essential drugs, penicillin, streptomycin and other newer drugs, most of which are coming from America.

The reputation of the Indian made drugs is so low that whenever one wants to be certain about the action of drug, foreign products are prescribed.

8. *Socialism in Medicine.*

Individualism in the matter of medical relief is doomed to failure. The minimum expenditure for the protection of health and cure of disease is beyond the means of the average individual. So we must pool our resources and funds, so that every one contributes in proportion to his income, but derives the benefit he needs.

Out of the population in a given year, only so many are sick. Of the people who are sick, a considerable proportion is indigent. We can always guess the average number that will be sick in a year, but no one can say what will be the burden of sickness on the individual at any time. Only a comparatively few are sick, and they have to bear the burden of heavy medical costs. It is impossible for them to bear this cost unless we can devise a method that will spread the payment over a much longer period of time than just the period of actual illness. It must also be spread over a large number of individuals. In other words there must be periodic payments of small amounts over a long period of time to provide for the concentrated cost of illness. I am confident this is feasible, only if the people can be convinced of its effectiveness and value.

Conclusion

Therefore the people can have an efficient medical service only if they are prepared to work for it. There is no sense in blaming the government or the profession, or the economic condition. The material is there. If they are ready to pool their resources, if the person giving the service is assured of a fair deal, they can have the medical service they desire. They have to organise themselves under the guidance of the professsion, and if the upper income groups are prepared to share the medical expenses in proportion to their income, an efficient service can be arranged. It all depends on the people what they want: without their support and active cooperation nothing can succeed.

At present the medical facilities are only available to those who can pay for it. The purchasing power of most of the people is so low, that they cannot afford it on their own. Either the purchasing power must be increased so that people can help themselves, or an economic organisation must be devised so that those who cannot pay for their medical esrvices, will be tended properly. The government is already mobilising all their forces for the former; various schemes and projects are afoot. As regards the latter, new economic organisation for medical relief has to be introduced. Certain vested interests who are retarding scientific medical progress and relief must be faced, interests that are sure to harm the country and the people in the long run. Fundamentally most of the problems can be defined according to economic terms. Ours is a poor nation, but with resourcefulness, organisation, improvement of economic status, wise leadership, and with the sincere desire of helping out our people, much can be done, and the medical man must face the problems and find ways and means to alleviate and prevent disease and disability.

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INDIAN DRUG INDUSTRY

The Indian Drug Industry had a very humble start towards the beginning of the First World War. From that time, it has made rapid strides in the manufacture of tinctures, liquors, patent medicines, vaccines, sera, etc. The industry thrived because a wave of patriotism swept throughout the length and breadth of the country. It is very gratifying to note that very soon, India became independent in the manufacture of sera and vaccines.

Towards the middle of World War II, it could be seen that many patent medicines, said to be manufactured by Indian companies, gradually went out of the market. On enquiry it was revealed that this was due to lack of raw materials. With the Japanese invasion in the East, the whole industry almost went off the market, so far as the patent and vitamin preparations were concerned. There was a great scarcity of both Indian and foreign medicines. This gave an opportunity to the black marketeers and spurious drug manufacturers. It is common knowledge, that various labels of both Indian and foreign drugs were imitated and sold at sky-high price.

The ultimate object of the whole industry was spoilt. Patients suffered and doctors also suffered because medicines did not produce the desired results. The small quantity of available imported drugs came under the price control. Firms manufacturing indigenous drugs had a booming trade during this period. How far these indigenous medicines helped the patients in their various ailments, is very difficult to assess. The medical profession looked helplessly to our manufacturers for the various basic chemicals and vitamins.

It is well known, that a small country like Switzerland manufactures huge quantities of vitamins which they utilize not only for the drugs manufactured by them but also, can cater for the necessity of bulk vitamins abroad. If this is possible for Switzerland, why is it not possible for the Indian manufacturers?

Recently, with the Korean War, this country has again been faced with the scarcity of raw materials, vitamins and x-ray films. Essential drugs like penicillin, streptomycin, and chloromycetin have gone out of the market. Unscrupulous persons have resorted to hoarding and black marketing and thus fleecing the poor patients. Although this war has little to do with the supplies in general, yet it has shown the necessity for building up in this country, the large scale production of basic chemicals, vitamins and antibiotics.

It is estimated that more than twenty crores of rupees are involved in the drug industry of this country. It may not be possible for one manufacturer to go into this problem of basic industries but it is possible for a combine to start any one of the industries mentioned above. About two years ago, the Government of India decided to start a penicillin, sulphonamide and paludrine factory in India. It looks that this plan has been pigeon-holed. This is the time when the Indian manufacturers should combine and take the initiative to plan for the manufacture of antibiotics. The importance of antibiotics, sulphonamides and x-ray films for the treatment of cases, both during war and peace, cannot be overemphasized. There is yet time to start this industry before the whole world is again plunged into another war.

Recently, there has been repeated appeals to doctors, for the use of Indian made medicines. It must be clearly understood, that a doctor's first loyalty is towards his patients. Unless the Indian manufacturers can give standardized products to the doctors, they cannot be sure about the effect those medicines will produce on their patients. This responsibility rests with the manufacturers. There are still many spurious medicine manufacturers in this country, which the leaders of Indian manufactures can bring to book.

Merely appealing to the doctors to use drugs manufactured by Indian firms will not suffice. Doctors must also be assured that this supply of drugs will not vanish as soon as import is restricted, or stopped due to exigencies of war. It is of course understood, that no country can be self-sufficient in all the basic industries. But at the same time, this cannot be an excuse for not starting the production of the essential basic chemicals for medicine, antibiotics, sulphonamides, anti-malarials and x-ray films. If the Government cannot do it, the Indian manufacturers will have to do it, not only for their own benefit, but also for the benefit of the suffering millions in this country. This will not be an uneconomical proposal. Every year, several crores of rupees go out of India for the purchase of the above materials from abroad. The industry will naturally help the Indian manufacturers financially.

A central standardisation laboratory can be started by the manufacturers where all the products could be tested and certified. This is not a new thing, because in the United States of America, all the drugs go through the Council of Pharmacy of the American Medical Association. This not only guarantees the purity and standardisation of the medicines, but also, creates confidence in the minds of the doctors when they use the same on their patients.

We think time has arrived when the Indian Medicine Manufacturers and the Medical Profession should come together and evolve a scheme in order to solve these difficulties and also, ensure the supply of essential drugs and appliances which may be required in future years.

CURRENT TOPICS

FIGHTING SHORTAGE OF NURSING PERSONNEL

Dr. Jivraj N. Mehta, Minister for Public Works and Housing, Bombay while declaring open the Sheth Narandas Manordas Nurses' Training College and Sri Harkissendas Nurrotamdas Hospital Nurses' Quarters in Bombay said:

"I am grateful to the authorities of the Sir Hurkisondas Nurrotamdas Hospital for having given me this opportunity to associate myself with them in this important function of opening the Sheth Narandas Manordas Nurses' Training College and Sir Hurkisondas Nurrotamas Hospital Nurses Quarters; as the facilities thus made available will considerably enhance the amenities for nurses education in Bombay and for their welfare during the course of training.

"I would also like to add my tribute of praise to Sheth Gordhandas Sonawalla of Messrs. Narandas Manordas for his generous donation of Rs. 5 lakhs which has made it possible to start this Training College for Nurses, and to add another block of Hospital building; as also to the authorities of the Hospital for providing such fine accommodation for their nurses.

Private Charity for Hospitals—"Hospitals in Europe and America owe a great deal to private charity both with regard to initial capital cost and for their maintenance. That tradition has been only feebly followed in our country by making relatively small donations towards cost of construction of Hospitals, Maternity Homes or Dispensaries and leaving their maintenance almost entirely to Government. Fortunately a new tradition was started by the Wadias. Shri Nussarwanji Wadia and Shri Gursetji Wadia by their princely donations amounting to Rs. 36 lakhs for the construction, equipment and maintenance of the Nawroji Wadia Maternity Hospital and Jerbai Wadia Hospital for Children in co-operation with the Government and the Municipal Corporation of Bombay. The Trustees of the Sir Hurkisondas Hospital have gone a stage further; and as in the case of the voluntary Hospitals in London, have taken up on themselves the entire burden of the construction, equipment and maintenance of the Hospital. This fine example has been followed by the authorities of the Bombay Hospital opened only this week by the Hon'ble Sardar Vallabhbhai Patel. And a new similar hospital—Dr. Balabhai Nanavaty Hospital—would be shortly opened at Vile Parle. Let us hope that more and more similar efforts would be made by the public all over tthe country.

Tribute to Hospital Authorities—"The public is grateful to the authorities of the Sir Hurkisondas Hospital for such an excellent management of it that it has created a new tradition in India, both for Hospital Organization and management. The Sardar has already paid a warm tribute to the authorities of the Hospital which they well deserve. During the course of 25 years this Hospital, which started with 40 beds only, has grown into a mighty institution with 280 beds and the authorities look forward to increasing it by 200 beds more. No greater tribute than this is necessary for the magnificent and devoted work of the authorities of the Hospital which has made this possible and the response it has evoked from the public who have so generously supported the Hospital and made such phenomenal growth possible. The credit goes to all those who helped in this cause. When so many have helped in this wonderful development, it would be invidious to mention names. But I cannot help but mention two of them who bore the lion's share in this burden; *viz.*, the late Shri Tulsidas Wagh and Dr. Gordhandas Bhagwandas. It was the business instinct and organisational ability of Sheth Tulsidas which truly laid the foundation of this great institution and the self-sacrifice of Dr. Gordhandas, who forsook his own medical profession—to devote all his energies to the further development of the Hospital, which have enabled us to celebrate its Silver Jubilee with such eclat. I shall now deal with the Nursing part of the Institution.

Increasing Nursing Personnel—"As the position in regard to the nursing personnel in this country is extremely unsatisfactory, any effort either on the part of the State or on the part of a private body like this Hospital, to add to the facilities for the proper and efficient training of nurses should be welcomed and deserves fullest support.

"Taking into consideration the fact that proper nursing is an essential part of medical practice, the numbers now employed in individual provinces reflect a state of affairs which will not be tolerated in any western country. The optimum proportion of nurses to hospital beds is taken as 2·5:1. On this basis the total number employed in certain provinces is hardly sufficient to provide adequate nursing staff for even a single hospital of 500 beds. If this country is to achieve, within a reasonable period, the nursing standards existing in other parts of the world, serious consideration will have to be given to the problem of producing and employing this class of auxiliary personnel on a much larger scale than has been attempted in the past.

Uniform Standards of Training—"The training schools for nurses at present are not of uniform standards and many of them do not come up even to the minimum standards usually required for such training. 'In the majority of the schools, services of the nursing student are used to supplement the work of the nursing staff of the hospital concerned, and she is treated rather as an employee of the hospital than as a student who ought to be given proper training. There are only a few hospitals which place the interests of the pupil nurses above that of the hospital and give her the kind of treatment which a medical student, for instance, gets in a Medical College and its affiliated hospitals. Another serious defect is that the accommodation provided for the residence, recreation and educational requirements of these pupils is extremely unsatisfactory. Deplorable living conditions with gross over-crowding is the rule rather than the exception. As the hospitals are under-staffed and

as the pupil nurses are required to participate in the routine duties, the student nurses get little or no opportunities for recreational and cultural activities.

"Not only in India but also in many other parts of the world the nurses' training period continues to be an apprenticeship. The young probationer is assigned to a ward almost from the day she commences her training and as a member of the sttaff she is counted upon for a definite share of nursing duties in that ward. She is, no doubt, given some sort of theoretical instruction; but, as a rule, all lectures are given in off-duty hours, in consequence of which, the teachers, more often than not, have to contend with tired nurses struggling to keep awake in the classes.

Haphazard Theoretical Instruction—"In spite of obvious defects, the apprenticeship system which is in vogue has much to commend it. The probationer learns her craft in the appropriate setting, namely, the hospital ward, by watching and working with the experienced craftswoman, the ward sister. This sister passes her knowledge and skill individually. By the time tthe probationer is in the final year, she has acquired the nursing skill by repeated practice and has been responsible for nursing patients suffering from various ills. However, her theoretical instruction, owing to the defects inherent in the system, has been haphazard and no attempt is made to correlate theory and practice; nor is any time available for wider reading to enable her to carry out these duties associated with nursing, to which I will refer later.

New Outlook—"During recent years there has fortunately been a change in the outlook of training of nurses. Owing to over-crowding in the wards and owing to the fact that numerous details of ward administration have to be attended to, the ward sister finds now-a-days no time for individual teaching. It has been become necessary, therefore, that the probationer should have some preliminary instructions in elementary nursing procedure and in the sciences basic to nursing, so that she has necessary background to enable her to benefit from ward experience. This has led to the establishment of preliminary training schools. During this preliminary period, the nurse has the opportunity to adjust herself to the routine of hospital life, to acquire regular habits of study and get an overall view of nursing as a profession. This is also the period in which she and the hospital authorities can decide whether she is suitable for training.

Student Nurse—"The term 'student nurse' instead of 'probationer' has come into use with the realisation of the claims that the student for systematic instruction and planned ward experience should not be swamped by the claims of the hospital for service. To carry out scientific treatment, the nurse requires scientific training, and for that purpose theory and practice should be co-related and the student nurse must have time to study and assimilate.

Increasing Duties of the Nurse—"Today the duties of the nurse cover a wide field and it is the privilege of a progressive institution such as this one to prepare the nurse to fulfil her role with competence. It is not sufficient for her to know the causal organisms of diseases. She must also be aware of the mental, social and economic causes of ill-health. She should be a skilled bedside nurse and also be able to apply the skills in the patient's home. She should be competent to carry out all types of nursing care and above all to take the load of worry off the patient's mind by diverting it in various ways and to act as a healer and soother of his sufferings. She should also be able to teach how to prevent illness and maintain good health. All this indicates that the nurse has to be a well-educated and a well-trained person, with her faculties developed during the period of her training in various directions. She has also to be tactful and firm with and sympathetic to the patients under her charge. It is, therefore, highly essential that the best amongst our women should be persuaded to take up the noble profession of nursing, which is truly nobler than that of the medical profession.

Public Health Nurses—"Every nurse like every doctor should develop a community and public health outlook. This takes us to the question of the training of a class of nurses called public health nurses—a very rare commodity indeed, in this country. Public health nursing includes all nursing services organized by a community or an agency to assist in carrying out any or all phases of the public health programme. Services may be rendered on an individual, family or community basis, in a home, a public school, in a clinic or in a business establishment. It is the responsibility of the public health nurse to assist in analysing health problems and related social problems of families and individuals, to help them with the aid of the community resources to formulate an acceptable plan for the protection and preservation of their health and to encourage them to carry out the plan. The public health nurse who has to carry out this generalised type of nursing services should be a fully qualified certificated nurse. Though throughout the educational programme, stress should be laid on the preventive point of view, extra curriculum of the study should be worked out for the public health nurse. It is essential that experience of rural work should be especially provided. The training of public health nurse should, therefore, be organised in association with important training centres where medical colleges and nursing education in institutions for the higher grade of nurses are provided. In these centres, facilities for field training should be made available. If the authorities intend to provide in this new nursing college a higher type of nurses' training in course of time, the possibilities of instituting training course in public health nursing should be explored, as the need for this type of health personnel is very great in the country.

"Nursing is a profession concerned with people. All her life, the nurse is in contact with men and women coming from all levels of society, and holding all shades of opinion. One of the earliest lessons she has to learn is how to live with people; how to acquire an understanding of human nature and develop a

kindly tolerance; how to adapt herself to a changing environment. The place in which these lessons are best learnt is the nurses' home. Just as in the hospital, the nurse learns to work in a team, so at the nurses' home she learns to live with a group. Exchange of ideas and opinions with other young people quickens the sensibilities and enriches personality. The nurses' home is also the place in which may be developed the individual sense of corporate responsibility through which only as Miss Nightingale rightly said, 'can professions, like nations, flourish'. A great responsibility rests on those who have the management of nurses' homes, as the atmosphere of the home is one of the factors in moulding character.

Qualities Necessary—"This hospital has always striven to set a high standard of service. A large share of the responsibility to maintain that standard rests on the ward sisters and staff nurses. To carry out nursing treatment efficiently, during the allotted span of duty is not sufficient. By their example and their teaching, the patient should leave the hospital with improved health habits and a conviction that the attainment of good health is within the reach of all. It is the sister's influence also, that counts most with student nurses. Human qualities are to some extent contagious. If our student nurses are to be kindly, courteous, energetic and useful they must come in contact with nurses possessing these qualities.

"A school of nursing is an educational institution. Education has been described by C.E.M. Joad, 'as a device for helping man to grow to his full stature; to enable him to realise his nature both mentally and spiritually and in that realisation become all that he has in him to be.' I hope that in this school of nursing the student will not only acquire the skill and knowledge needed to be an efficient nurse, but that she will also acquire an attitude to life, a temper and habit of mind, which will sustain her through discouragements and disappointments and enable her to meet any situation with equanimity.

Nursing Profession is Honourable—"So far I have spoken on the general question of Nurses' training and profession. I have also indicated what kind of women are wanted for this profession. But a question may well be asked, 'Is all this possible with the personnel at our command?' It is true that at present we sadly lack in the right type of personnel to a considerable extent, but I may also well ask, if we have made an effort in right earnestness for securing good material required for the nursing staff. It is true that the nursing profession is not well-looked upon by our educated countrymen, let aside the ignorant people who form the bulk of the population. It was only a few months ago that I could persuade after great effort a highly distinguished leader of the Uttar Pradesh to agree to women taking up midwifery training as a profession but he could not make himself reconciled to women taking to nursing as a profession as it involved looking after and handling the bodies of men. We have to fight this difficulty which is indeed a genuine one. And we must succeed. Until recently dancing was considered an undesirable profession for our women. It was not so in ancient days. Fortunately a reaction has set in and highly educated women coming from high classes of society have begun taking lessons in Dancing. The newly started University of Baroda has even started a degree course in Fine Arts with Dancing as one of the important subjects of its courses of study. I am, therefore, confident that an increasing number of women would be coming forward to take to nursing as a profession, which has the added advantage in that it is one of the highest means of rendering social service to the sick poor in the community. But an effort needs to be made. I do hope some of our women social workers will devote themselves entirely to this purpose. The spirit of service is inborn in our women.

Maharashtra's Experience—"It was the late Gopal Krishna Deodhar of the Servants of India Society, who devoted himself to women in Maharashtra taking to nursing as a profession. And he has well succeeded. During my recent tour in the different Districts of Maharashtra, I found a number of young women—many of them fairly well-educated, working as pupil nurses in the different District Hospitals and Maternity Homes. I cannot say the same of my experience in the Hospitals in Gujerat. Should not the Gujerati women be equally willing to take up an independent profession of their own, which would enable them to earn a salary almost twice as big as that of a school mistress, if you take Boarding and Uniform allowances into consideration, besides the salary. Some of our women social workers should dedicate themselves to this purpose and devote themselves to this cause. With such a splendid hospital like the Sir Hurkisondas for training, with such a large number of women's and girls' training institutions in the neighbourhood, with the facilities available here for their comfortable residence and for their systematic and scientific training, the response ought to be good if a persistent effort is made. The nurses in training will now have the status of 'student nurses', with hours of work, of training and of recreation duly demarcated.

Appeal to Educated Girls—"Won't our women students studying in Colleges direct their attention to take to nursing as a University career; now that the Bombay University is seriously thinking of introducing a Degree in Nursing? Madras has already taken the lead in this direction and I hope the Bombay women students will follow suit and thus provide for themselves an independent career. I appeal not only to the widows to take to this sphere of service; securing at the same time a source of income for the maintenance of themselves, their aged parents and younger brothers and sisters instead of depending upon their relations for their maintenance, but also to the educated college girls to open out for themselves a new and an honourable career affording at the same time an opportunity of social service, so that Nursing in India can develop to that height and status which are their due and which are actually attained in the West.

NOTES AND NEWS

BIBLIOGRAPHY OF CHOLERA

A check list of books, monographs, reports, etc. on Cholera, printed before 1900, and available in the older Libraries of India, was prepared by Dr. D. V. S. Reddy, in connection with the visit of Cholera Study Group of World Health Organisation.

Dr. Reddy writes:

In the course of my search for old books I made a note that the Indian libraries have a very varied collection of books on Cholera and I thought it my duty as a Medical Historian in India and Medical Bibliographer for the Government of India, to bring this to the notice of the Cholera Study Group of W.H.O. I have myself gone through some of these rare tattered disintegrating volumes, crumbling to powder, at the very touch of the hand. Some of these contain valuable data regarding the geographical distribution and natural history of the disease both in endemic areas in India and the varied clinical features of the epidemic outbreaks in various parts of India at different periods. It is the object of the Cholera Study Group to investigate into the special conditions and causes that make Cholera endemic in certain parts. Since the older investigators were learned and experienced British Medical Officers, living in camps or in various regions, for many years, themselves falling victims to Cholera very often, they have made elaborate detailed notes, which deserve to be read by any investigator of Cholera.

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THAI DOCTORS TRAINED BY WHO TEAM AT SIMLA FOR ANTI-YAWS CAMPAIGN IN THAILAND

Two doctors and one public health technician from Thailand are at present in New Delhi after completing a month's course of specialised training in modern diagnosis and treatment methods at the Simla Headquarters of the WHO venereal disease control team which operates in the Himachal Pradesh, North India. They are Dr. Subhatra Suvannamalik, Dr. Somchai Suchakorn, and Mr. Chaana Maiphoom. All three went to Simla under Fellowships granted by the United Nations Children's Emergency Fund (UNICEF).

They will be engaged on a yaws-control project to be launched shortly at Thailand by the Thai Government among the 300,000 population of Ratchburi Province, 60 miles S.W. of Bangkok. Yaws, which is stated to affect 10 per cent of the schoolchildren in certain communes of Ratchburi, is a disease resembling syphilis but is non-sexually transmitted. Diagnosis and treatment procedures are similar for both diseases.

The Thai anti-yaws project, which is receiving financial assistance from UNICEF and technical guidance from WHO, will be under the direction of Dr. Boon Suvarnasara, Director of the VD Control Division of the Thai Public Health Department, who last year spent six months in America as a WHO Fellow studying the latest advances in VD control methods. He will be assisted by Dr. Somchai as clinician and by Dr. Subhatra and Mr. Chetana in the laboratory diagnosis work. International staff will be Dr. Donald R. Huggins, Chief of VD Control in Trinidad, Expert Consultant; Dr. K. Urdal of the Oslo Bacteriological Institute (Norway), Labortory Expert; and a Public Health Nurse.

DANISH DOCTOR TO DIRECT VD CONTROL IN HIMACHAL PRADESH

Dr. S. Christiansen of the Danish Institute of VD Control in Copenhagen arrived in New Delhi on 1.7.1950 on his way to Simla where he will act as a consultant to the WHO venereal disease control team which for the past year has been working in conjunction with the health services of the Himachal Pradesh Government. Dr. Christiansen prior to his assignment with WHO was in charge of one of the VD Clinics in Copenhagen. He was attached to the Copenhagen University Clinic and to the Finsen Institute for Skin Tuberculosis in Denmark for several years. He will replace Dr. J. C. Cutler who has been recalled to the U.S.A. to resume his regular work with the VD Section of the American Public Health Service. Dr. Cutler was on loan to WHO for only one year.

The leadership of the WHO VD control team will now devolve on Dr. B. R. Tampi, an Indian national,

in consonance with the policy of WHO to entrust the work to local health personnel. Dr. Tampi has long experience and training in the Indian Army Medical Corps, in America and in England. He was appointed last as the leader of the "parallel team".

On his visit to the WHO Regional Office at New Delhi prior to his departure, Dr. Cutler said, "Round our WHO VD control team has been built up a group of Indian doctors, serologists and laboratory technicians. This 'parallel team' is recruited and paid for by the Himachal Pradesh Government which also provides housing for the WHO laboratory equipment and for the staff; transport vehicles and thousand and one small needs of the team. At the Simla Laboratory a score of doctors and technicians from all over South-East Asia have been or are being trained, while sub-centres carrying on VD control under the team's supervision have been established in half a dozen rural dispensaries in the Himachal Pradesh."

Dr. Cutler continued, "In the Ghund area where for uncounted years syphilis has spread unchecked, infecting whole families and whole villages, killing, maiming, undermining health and work potential, slowly exterminating a whole race of hardy people, a new vista of health and prosperity is now opening up thanks to the co-operation of national and international forces in the WHO VD team. This is the dawn of a new era for them and also for countless thousands of others when the practical experience gained in the Himachal Pradesh campaign is given general application in similar areas throughout Asia."

AWARD FOR OUTSTANDING RESEARCH IN THE FIELD OF INFERTILITY

The American Society for the Study of Sterility offers an annual award of $1,000 known as the Ortho Award, for an outstanding contribution to the subject of infertiilty and sterility. Competition is open to those in clinical practice as well as individuals whose work is restricted to research in the basic sciences. Essays submitted for the 1951 contest must be received not later than March 1, 1951. The Prize Essay will appear on the program of the 1951 meeting of the Society. For full particulars, address The American Society for the Study of Sterlility, 20 Magnolia Terrace, Springfield, Mass.

ILO TO CONVENE MEETING ON DUST DISEASES

The Governing Body of the International Labour Organisation on 2-6-1950 approved in principle the convening of an international conference of experts on pneumoconiosis—disease caused by dust.

The meeting will consider measures for preventing pneumoconiosis from the view point of the physicist, chemist and engineer. It will enlarge on the work accomplished by the Third International Conference of Experts on Pneumoconiosis held by the ILO at Sydney, Australia, in March. The date and agenda of the conference will be considered by the Governing Body at a subsequent session.

The meeting—The Governing Body's 112th since 1919—is preparatory to the opening at Geneva on 5-6-1950 of the ILO's 33rd general conference.

GOVERNMENT OF INDIA DEPARTMENT OF SCIENTIFIC RESEARCH

The following are excerpts from the Technical Report, No. 9 on the work of the various laboratories of Department of Scientific and Industrial Research in U.K. issued from the Office of the Scientific Liaison Officer, India House, Aldwych, London, W.C. 2.

FOOD INVESTIGATION ORGANISATION

New Publications received are;

Technical Paper No. 1 (Price 9d.)—The Storage of Apples: Interim report on Skin-coatings. The Ditton Laboratory and the Convent Garden Laboratory: A brief explanation of their work.

Following are some of the recent notes issued: "The Adenosine Triphosphatase in Aqueous Extracts of Rabbit Muscle; Combination of Sulphur Dioxide with Concentrated Orange Juice, II, The Rate of Reaction; Food Preservation in Relation to Food Poisoning; Some Bacteriological Aspects of Handling, Processing and Distribution of Fish; The Spoilage of Fresh Fish and Its Control."

Atmospheric Pollution Bulletin—Vol. 16, No. 12 for March, 1949, is now available. It gives a monthly summary of observations and abstracts of literature.

WATER POLLUTION RESEARCH LABORATORY

The following Abstracts recently published have been received. "Water Pollution Research (Summary of Current Literature)", Vol. No. 12, for December, 1948 (Price Rs. 2).

(Beginning the next volume the above publication is re-named—"Water Pollution Abstracts").

Water Pollution Abstracts—Vol. 22, No. 1, Jan. 1949; No. 2, Feb. 1949; No. 3, Mar. 1949; No. 4, Apr. 1949, Price Rs. 2 each.

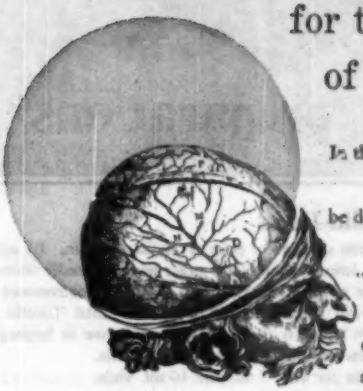
OTHER NOTES

Ministry of Health (U.K.) has issued an interesting publication entitled: *"Housing Manual, 1949"* (Price 3/6d.). It is elegantly produced and contains numerous plans and photographs. It contains the following chapters: (1) Housing and Site-planning; (2) The Dwelling in its surroundings; (3) Houses: Planning and Standards of Accommodation; (4) Flats and Maisonettes: Planning and Standards of Accommodation; (5) The Heat Installation; (6) Services and Equipment; (7) New Methods of Construction.

* * * *

Technical Report No. 13—Issued from the Scientific Liaison Department, India House, Aldwych, London, W.C. 2.

You have one outstanding drug for the treatment of depression



In the depressed patient, 'Dexedrine' Tablets can be depended upon to dispel the characteristic "chronic fatigue"; to induce a feeling of energy and well-being; and to restore optimism, mental alertness and capacity for work.

Dexedrine's anti-depressant effect is notable for its freedom from distracting elation, irritability and inward nervous tension. Its uniquely "smooth" action spares the patient the uncomfortable feeling of "drug stimulation."

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Insulin-Boots

A sterile solution of pure crystalline insulin. Its action is rapid in onset, lowering the blood sugar level markedly soon after injection. As the effect is not sustained it is often convenient to give Insulin with the longer acting Protamine Zinc Insulin. Injection of Insulin-Boots is the treatment of choice in hyperglycaemia.

20 units per ml. 5 ml. and 10 ml. vials.
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Globin Insulin *(with zinc)*-Boots

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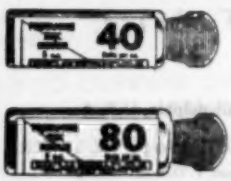
80 units per ml. 5 ml. vials.



Protamine Zinc Insulin-Boots

A stabilised suspension of protamine insulin with zinc, of low solubility. Absorption takes place very slowly, the effect of a single dose being spread over more than 24 hours. In its gentle, steady action, Protamine Zinc Insulin imitates the natural secretion of the islets and minimises the risk of hypoglycaemia.

40 units per ml. 5 ml. and 10 ml. vials.
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Literature and further information from the Medical Information Department,

Boots Pure Drug Co. (India) Ltd., P.O. Box 680, Bombay

Commonwealth X-Ray and Radium Laboratory, Melbourne—Technical Communication No. 36 is under the title of *"Dosage Calculation with Radio-Iodine"*. It is written by Dr. T. H. Oddie of the Tracer Elements Section. (January, 1950).

When radio-iodine is used in therapy, say for hyperthyroidism or for some forms of cancer of the thyroid, it is often desirable to know, at least approximately, the dose delivered to the tissues. If the dose is estimated in rontgens, comparison may be made with other forms of radiation treatment.

The general principles for calculating radiation doses from internally distributed radio-active materials have been outlined briefly by several authors (References are given in the report).

However, this earlier information requires some revision to take account of the improved knowledge of the disintegration scheme of radio-iodine 1131 resulting from the work of Metzer and Deutsch and the opportunity has been taken to tabulate the dosage factors for 1131 in rather more detail.

CORRESPONDENCE

(The Editor is not responsible for any views expressed by contributors)

TIME FOR ACTION

Sir,

I have before me the December issue (1949) of the Journal of the Indian Medical Association and find in it "Imminent Catastrophe" by Lt. Col. P. C. Datta, Simla, and "Synthesis of Medicine" and "Status of Indian Medical Post-Graduate Qualification" by Lt. Col. Amir Chand, Delhi and read with interesting astonishment the woeful wailing of these shining gems of the medical profession in India. But what a sad commentary on the medical profession in India that such outstanding personalities of it fail to see that nothing will avail until we say what we mean and mean what we say and mean business and are ready for action and any suffering that may come in its trail and all this will be impossible to undertake until we are one and speak with one voice.

I draw the kind attention of these big brothers and others who would to the "Editorial" of the May 1949 issue of the *Indian Medical Gazette* wherein four classes of doctors are suggested even to-day when the entire Indian medical profession, as such, decided for and got into being "one-portal" system of medical education and "only one class of doctors" and demanded with one voice "one and same service for all." With this policy having been proposed in the *Indian Medical Gazette* which is said to be the mouthpiece of the Indian Government, there is small wonder that the hand of the clock has been set back in C.P. which is now out to produce again "a lesser doctor still than the present licentiate for the rural India," obviously because they in rural India are deemed to possess lesser life than their urban folk and probably because the present licentiates proved in the last war that they were not at all lesser doctor. And luckily in the same issue appears my article on "medical education" in which I have pleaded for one and only one standard of education and doctor.

'Riches and intelligence seldom go together.' To these words of Col. Amir Chand I would like to add, with his kind permission, "authority and common sense seldom go together." It is due to the ill-advice given to the governments of the hours from time to time by the eminent members of the I.M.S. and later their prototype, the Indian graduates that these eminent members of our profession have to wail and lament to-day, thinking that probably it has already become too late to mend. Col. Datta feels pained to find that even "the people and politician of the present free India decry the very system" which being scientific (*i.e.*, true) has raised within such comparatively short time, the standard of health of the nation, inspite of the basic and sore difficulties (of illiteracy, economic etc.). Col. Datta indeed feels so puzzled that, to meet his opponent, he puts away all the rules of the "Medical Councils" constituted by law and medical ethics" as understood and observed by the profession.

Col. Amir Chand has quoted Shakespeare at the head of column one on page 104 of December 1949 issue of the Journal of the Indian Medical Association. The couplet so fittingly applies to our class. The small number from amongst us who functioned as advisers to the governments from time to time is like those that had gone to Rome and the bulk of the profession is like those who remained at home. The former were rather possessed of their superiority and in the pride of power they misguided the governments and hated and harmed their professional brothers as much as they possibly could. And it is this their dark deed that is the cause for wailing and lamenting to the profession as a whole and these shining gems of it particularly too, as given herein.

However, as good comes out of evil, it is to our good luck that the lamentable state of affairs has been able to arouse and awake the entire profession in general and these two shining stars of it in particular. Col. Datta's words that "to-day when people's mind is fed and guided by propaganda, we cannot sit idle" mean business and indeed urge and encourage us for action for which he has already pleaded. In this connection, therefore, I would like to draw the kind attention of these big brothers in particular and the profession in general to the article 'Back to Village' by Dr. Santilal Roy appearing on page 14 in Medico-legal supplement of April 1949 issue of the *Indian Medical Journal*, and my articles 'God helps those who help themselves,' 'Emergencies in Medical Practice' and 'To be or not-to-be,' appearing in medico-legal supplement on page 71 of July 1949 issue of *Indian Medical Journal*, on page 296 of November 1949 issue of *Indian Medical Journal* and in medico-political supplement on page 25 of 1950 issue of the same journal respectively. I do not repeat the contents of these here but as these deal in good detail with the burning questions which are at present agitating so much the mind of the profession, it would be well worth if they are referred.

May I bring to the kind notice of these eminent brothers the recent orders of the U.P. Government

about the fees the profession can charge to-day in the year of grace 1950. The fees of graduates in medicine (who at least are what is called fully-qualified medical men) have been brought down to half of what these were years ago when the living conditions were eight to twelve times cheaper than to-day. But could the government dare issue similar "Farmans" in respect of other professions, trades or labour in general. No, they dare not. Why? Because these run on trade-union basis which alone scares the present-day politicians and governments but which we could not choose as ours is not only the essential of essential services but also the most humanitarian service and honourable profession. But that should not be taken to mean that we could with impunity and perpetually be humiliated and harassed along with our dependants. Even without forming into a trade-union, we can bring, as the profession in the Western countries has done, the mightiest governments on earth to knees before us. Only we need have solid unity and speak with one voice.

Therefore, as previously suggested by Dr. Santilal, Dr. U. B. Narayan Rao and myself, the measures put forth by Col. Datta at the head of column two on page 103 of December 1949 issue of the Journal of Indian Medical Association should be welcome to all. Only I would request that all priority be given to unity and solidarity which be established first, by having one and only one Central Indian Medical Association, like other countries.

As to the form of propaganda, instead of the unethical one proposed by Col. Datta, I take leave to suggest that let us act as Dr. Roy has suggested in his article "Back to Village" and the same by me in my article" God helps those who help themselves." and start action as given by Dr. U. B. Narayan Rao, with the 'whirlwind' step in the shape of 'Satyagraha' in C.P., because this will give great momentum to our programme, as a whole.

For all this, let the central executive of both the I.M.A. and A.I.M.L.A., meet at once to chalk out a common programme and float a fund to which all should contribute, each according to his means, both in lump-sum and in monthly instalments, from now onwards. This should be utilized wherever and whenever need be for our programme but particularly to help (as needed). 'Satyagrahis' and to fight elections, as detailed herein below.

I. Whirlwind step of Satyagraha should at once be started. Our elders like Col. Amir Chand who luckily have time and means to do so may please start and lead it. Dr. U. B. Narayan Rao has already stated that he will join at once and I too will do so, as I then wrote to Dr. Narayanrao. Thus it will be quite O.K. if the first batch was composed of these three. I am sure there will be no shortage of volunteers if the lead was given by elders like Col. Amir Chand, rather it will immensely enthuse and stimulate the profession, so as to surely lead us to success.

II. Secondly, both the associations jointly should issue a clear warning to the government that unless by August 15, 1950,

(*i*) The Black Act of 1933 is repealed and one medical register is opened containing names of all allopathic doctors registered at present with the Indian or any provincial medical councils, in an alphabetical order, for the whole of India;

(*ii*) The Medical education is made a central 'subject';

(*iii*) There is ordered and maintained 'one and only one standard' of teaching and examination, leading to 'one portal system' and providing thus for equal standard of medical aid for all alike; and

(*iv*) There is established and continued but one 'service,' with one and same conditions of it, everywhere and all over India; the entire medical profession will, exactly on and from August 15, 1950, be compelled to take to direct actions, as decided upon by the profession then and from time to time, with their main slogans.

"Quit services." "Back to villages," "Division and disunity in the profession is the creation of foreign rule and is being perpetuated by the National Government. Stop this nonsense. Unite. Fight." etc., according as the profession may like to add.

Finally, as Col. Datta has given certain reasons why the Ayurvedic physicians are more popular, let us see if we too can not do the same or if there are any deficiencies in us too: For, my own way of dealing with things is that I first see if I am above all suspicion before I go to find fault with others. To me the surest way of correcting others is first to correct oneself. And, again, it is well known that the best way of meeting an adversary is to meet him on his own ground which, in the present age, is in the councils and in the country (the people). So let us be back to the village and serve the people and be popular with them and then through their aid enter the councils. We are as good Indians as the Ayurvedic physicians and we could be equally or rather more popular with the rural or real India, only if we would. Most of us come from the villages. This is a sure shot and double-edged weapon: It will enable us to win over to our side the real India and at the same time it will remove us away from the circle of the high officials and other members of the government who reside in the towns and utilize almost all our services and that too free and pay us in the bargain by preventing us thus from mixing with the people and setting the public opinion against us and particularly slaving the gems and whips of the profession against their very profession in general, the fruits of which we are reaping to-day.

Therefore, for this, let us (the entire profession all at once) refuse point blank to give them free service or undue or flattering attention or dancing attendance. Let us give the lie in their mouth and tell them that there is nothing, as they say, for them or worth them in allopathy which they are now out to treat as foreign (*i.e.*, non-truth for, in the opinion of all religions and

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6/4

savants including Bapu truth is never foreign). It will need boldness and courage to do so. But we will have to muster all these, if we want to live and live with honour.

Secondly, let the profession (and those of it who are out of services or retired, straightaway and now) leave the towns and settle in villages and let none in future settle in towns. Late Shri Deshbandhu C. R. Das was perfectly right when he said that, for India to be really free, we must do away with the cities and towns, in this preeminently agricultural and rural country. Bapu too was ever in favour of indigenous and individual labour and industry and against mills and factories which really cause and develop cities and towns. And to-day we find that all our difficulties (like our presently-noted one, rationing, for it collecting rations, great disproportion in the standard of the people etc.) are on account of the city and town dwellers for the comfort of whom alone we are bleeding blanche the real rural India, while swearing in everybreath by the latter only. How sad and shameful that even in this national India it has been decided to treat the life and health of rural India as a lesser one and of no serious attention, worse even than that of dogs who, in the animal kingdom, get the services of one and the same standard and qualification doctors as provided for any other animal.

This will thus compel all those who lord over us, to open their eyes and prevent them from hating us as well as our healing art, as they do at all hours except only when they are actually begging at our doors for solace, comfort and their very life. This will make all talk and act sense.—I am etc.

12-3-50. S. B. SINGH,
R.M.O., Canning College Dispensary,
Lucknow University.

THE JOURNAL FOR AUDIO-VISUAL AIDS TO EDUCATION

Sir,—You may be interested to know that we are bringing out a monthly Magazine, *Visual Education* devoted to the "Audio-Visual" aids to child and social education and public instruction. It would be the first one on the subject in our country, and would attempt to give the information demanded with the growth of educational, scientific, instructional and documentary films, etc.

Since we are venturing on a subject on which little has been written and talked in India but which is vital for the healthy growth of a democratic mass education, and otherwise too, we are anxious to put ourselves in touch with the educational, and such scientific and academic societies who are contributing to the store of human knowledge and the cause of education.

It would oblige us, therefore, if you send us the names and addreses of those who may be interested, and your views, articles or suggestions, related to the subject. I am etc.

8-3-1950. NARENDRA GOYAL.
National House,
Apollo Bunder, Bombay.

OPIUM ALKALOIDS MANUFACTURED AT THE ALKALOIDS FACTORY, GHAZIPUR—AVAILABILITY FOR SUPPLY—TO THE MEDICAL AND PHARMACEUTICAL PROFESSION IN THE COUNTRY

Sir,—I am directed to say that the Government Alkaloids Works, Ghazipur, is now in a position to meet the requirements of opium alkaloids in the country. Repeated tests carried out in India and in the United Kingdom by recognized analysts have established the quality of the products manufactured to be of B.P. standard. The Government of India consider that, in the circumstances, the need for importing such drugs as are manufactured at the Ghazipur factory is not established and they would request the co-operation of your Association in cutting down such imports. A list of the alkaloids available in the Ghazipur works with their current prices is enclosed, and it is requested that contents of this letter may be circulated to the members of the Association so that they may get their requirements of opium alkaloids as are manufactured in the Ghazipur Works from that Factory.

2. I am to add that the Ghazipur Works are able to supply the drugs mentioned in the enclosure in powder form only and not in the form of tablets or ampoules for injection. The question of manufacture of morphine and its salts in tablet form is, however, under the consideration of the Government of India.

3. Any further information which you may require in this connection may be obtained from the Manager Government Alkaloid Works, Ghazipur.

I am etc.

New Delhi, J. N. SAKSENA,
15-6-1950. Under-Secy. to the Govt. of India,
Ministry of Health.

Statement Showing Names of Alkaloids and their Prices for (1950-51) which are Manufactured in the Alkaloids Works, Ghazipur:

Name of Drug	*In bottles less than 1 oz.*	*In bottles of 1 oz.*	*In bottles of 2 oz.*	*In bottles of 4 oz.*	*In bottles of 8 oz.*	*In bottles of 1 lb.*
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Morphine ..	37	34	33	32	31	30
Morphine hydrochloride	32	29	28	27	26	25
Morphine sulphate ..	32	29	28	27	26	25
Morphine acetate ..	32	29	28	27	26	25
Morphine tartrate ..	37	34	33	32	31	30
Codeine ..	36	33	32	31	30	29
Codeine phosphate ..	32	29	28	27	26	25
Codeine sulphate ..	34	31	30	29	28	27
Ethyl morphine Hydrochloride (Dionine)	42	39	38	37	36	35
Narcotine ..	—	8	7½	7	6½	6
Narcotine hydrochloride	—	11	10	9	8	7
Narimine hydrochloride	—	20	19	18	17	16
Papaverine ..	41	38	37	36	35	34
Papaverine hydrochloride	42	39	38	37	36	35
Thebaine ..	27	24	23	22	21	20
Selling price for Medical Opium per pound						
Indian Medical Opium Powder @100° consistence	—	—	—	—	—	35
Indian Medical Opium Cake @90° consistence	—	—	—	—	—	30

CATARACT OPERATION IN UPPER INDIAN VILLAGES

Sir,—Operation on the eye for cataract has been in vogue from time immemorial in the Uttar Pradesh, the Punjab and possibly also in Bihar and the Madhya Pradesh. The indigenous system still flourishes and is practised by those known as the *Sathias*. The operation consists of dislocating the lens with a pointed instrument and pushing it back into the vitreous chamber. The pain is bravely borne by the patient who is immediately rewarded by the restoration of sight. This has a dramatic effect on him and his friends. The aphakia is usually followed either by sepsis or a gradual loss of vision. The field of the *Sathia's* activities for the last fifty years or so has become restricted to the rural areas where they travel from village to village and get enough blind people, too poor and old to go to the nearest urban hospital. No charge of malpractice is laid against the failure of operation for obvious reasons. The Government of the Pradesh concerned does not take any action as it probably considers itself pledged to protect and encourage indigenous practice.

In the rural areas, again, mass operation on cataract is performed by qualified men, both real and nondescript, at the invitation of rich industrialists and zemindars who want to reap merit by restoring sight to the blind. The scheme is duly financed, and the time and place of operation are announced or advertised in the press or made known by the beat of drums. A surgeon of repute attracts a large crowd of patients. Preoperative examination and care are far from satisfactory. Operations are performed under the shade of a large tree or on a verandah. The patients are carried to their beds or piles of straw and are deposited on the dirty old bed clothes they were instructed to bring with them by the advertiser. The surgeon departs leaving a dresser behind for after-treatment. In due course the bandage is replaced by green shade and the patient is discharged. Those with complications seek help at the nearest hospital. The aftermath of failures is sometimes considerable. Mass cataract operations will be necessary until permanent hospitals are organised in the rural areas. Meanwhile, the unsatisfactory method now in practice should be improved on the lines indicated; more than one qualified surgeon, according to the crowd to be handled, a pathologist and sufficient number of dressers, ward attendants and sweepers should form the team. It should be impressed on the benevolent financier that more merit will accrue if fewer people are successfully treated than a large number with indifferent results.

With the growth of a sense of responsibility for the welfare of the people, the medical profession should take the initiative. The practice of the *Sathia* should be stopped by legislation. Private arrangements for mass operation should be improved. Our blind countrymen have a right to expect the best from us as a profession. It is not enough if, after the sight is restored, the patient is able to tell a bull from a horse; that was the standard fixed by a well known English ophthalmic surgeon who flourished in the good old days in the Punjab. Our aim should be that every blind person whose condition is curable, must have his sight restored as near normal as possible. The nondescript 'qualified' men referred to spring from sources recognised by Government but not those who practise the international system of medicine. They will for the present remain beyond our control unless Governments concerned revise their opinion. I am etc.

Banaras.
Ramkali Chaudhuri Road, S. K. CHAUDHURI.
June 1, 1950.

TOUR TO ENGLAND

Sir,—I am sending you a programme of the tour. As suggested we would be very pleased to have scientific discussions or demonstrations in the various places to be visited. If any of your readers interested will communicate with me as soon as possible, arrangements will be made accordingly. It would also be very nice if we could meet, socially, members of your Association in each place to be visited. Perhaps you could notify your readers to this effect.

As our tour only lasts five weeks, I am very sorry that we shall not have time to visit Calcutta. It is hoped that these exchange visits will be repeated every year, in which case Calcutta will be included next year.

The response from Indian Doctors has been very poor. I have had only one letter from Calcutta. I am pleased to tell you that the fare has been reduced again, and is now £128 return, so that if any of your readers still wish to take advantage of this offer they should communicate direct with Air-India International Limited, Bombay. I am etc.

128, Harley Street,
London, W.1. R. HINGORANI.
June 1950.

PROGRAMME OF TOUR

Bombay—3rd October, *Poona*—4th October, *Ootacamund*—5th and 6th October, *Bangalore*—7th, 8th and 9th October, *Mysore*—10th, 11th, 12th and 13th October, *Madras*—15th and 16th October, *Hyderabad*—17th and 18th October, *Gwalior*—19th and 20th October, *Agra*—21st, 22nd and 23rd October, *Delhi*—25th, 26th and 27th October, *Jaipur*—28th, 29th and 30th October, *Udaipur*—1st, 2nd and 3rd November and *Bombay*—5th, 6th and 7th November.

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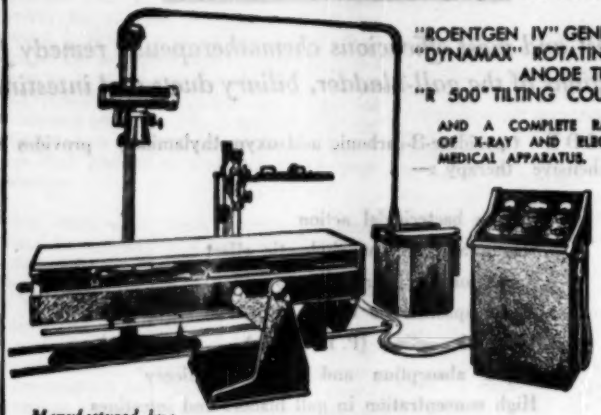

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actinomycosis or other mycotic conditions we would like to mention the fact in our report.

Your assistance will be appreciated. I am etc.

Leahi Hospital,
649, Pokole Street,
Honolulu, Hawaii. HARRISON S. PAYNTER, M.D.

TRAINED TEACHERS IN PHARMACOLOGY

Sir,—As one interested in the subject of Pharmacology I have found with regret and concern the difficulty in getting trained Pharmacologist both as a teacher or a research worker.

Most of the present personnel have had their training under Col. R. N. Chopra and some in foreign countries also. These men are now getting old and some of them have already retired or are about to retire. There are few amongst the younger generation to replace them. Although some research workers are being trained by Dr. B. Mukherji at the Central Drugs Laboratory they cannot take up teaching appointment having no teaching experience since they are not trained in a teaching institution. I do not know who is actually responsible for the training of these men whom we so badly require. We have given no impetus or encouragement with the result that no one cares to take up pharmacology as a special subject. I always anticipated this state of affairs and wanted to train young men but my resources being limited with no financial assistance and encouragement from any quarters I could not succeed to the extent as I wished to.

In this connection the recent remarks of Dr. Fosdick, President of the Rockefeller Foundation will be of interest—

> "Though no single subject in medicine would seem more important than pharmacology, which deals with the action of drugs and their uses in diseases, this field of medicine is hampered by lack of adequate financial support. This situation is doubtless responsible for the failure of pharmacology to attract recruits and for shortage of outstanding younger men to fill professional chairs which are becoming vacant. Larger support is needed not only to promote fruitful research in this important field, but also to improve the teaching on the applied side."

Because of the want of a trained pharmacologist the Professor of Physiology is also doing Pharmacology at the Cuttack Medical College; at Madras, one Professor manages both the Madras Medical College and the Stanley Medical College and this condition prevails in many other Universities. Even the Calcutta Medical College is without a separate Professor and the Professor of the Calcutta School of Tropical Medicine manages both the institutions. This system, which is followed even in institutions under Government control, should be discontinued as it is not conducive to proper teaching nor healthy growth. For want of properly trained men some of the posts are being filled up by persons who have retired from service. The Armed Forces Medical College at Poona has been trying to get a properly qualified Pharmacologist but has not been able to secure yet. The result will be that these special posts will be filled up by men with no training or experience and eventually both the standard and efficiency will suffer. Already there are signs of degeneration. Shall we allow things to degenerate further?

It is very important that efforts should be made to train young men on the principles of pharmacological research and give them opportunity of gaining experience as a teacher and also endeavour to train others as pure research workers. I would suggest that at least two institutions should be selected as training units and I am sure this can be done with some financial help. As I mentioned before I received no financial help or encouragement and still I could train a band of young men. One of my former students and assistants is now a Professor at the Campbell Medical College, one has been sent on deputation as Professor to the Lady Hardinge Medical College, New Delhi, and several are working as demonstrators in different colleges.

I also feel that better type of men should be selected for foreign scholarships. Selection should be made according to our requirements in those branches where expect workers and teachers are badly needed Whoever is responsible for this selection I am sorry to say this principle has not been followed. Is it not time that the selection committees of the Central and State Governments are reorganised?

Recently the Central Government appointed an "Upgrading Committee". I do not know, and I am sure the profession does not know what report the Committee has submitted. So far as my information goes no attempt has been made to upgrade any Institution to train Pharmacologists. This is regrettable.

The former Vice-Chancellor, Mr. P. N. Banerjee of the Calcutta University, announced several times about the introduction of Post Graduate Department in Medicine, under the auspices of the Calcutta University, but so far nothing tangible has happened. Whoever was responsible for this work no one appears to be interested in the subject of Pharmacology or realised the importance of having trained men in the subject.

We should therefore give our best thought to this aspect before it is too late to remedy. I have been trying to impress the authorities the seriousness of the situation for some time. I suggest that the Director-General of Health Services should discuss this question with those interested and formulate a well thought out plan of a permanent nature with minimum expenditure without further delay. I am etc.

4-7-1950.

Department of Pharmacology
R. G. Kar Medical College, B. N. GHOSH.
(Formerly Carmichael Medical College)
Calcutta.

REVIEWS

HANDBOOK OF OBSTETRICS AND DIAGNOSTIC GYNECOLOGY—By LEO DOYLE. First Edition, 1950, 240 pages. Published by University Medical Publishers, P.O. Box 761, Palo Alto, California, U.S.A., available from The Kothari Book Depot, King Edward Road, Parel Bombay-12, India. Price Rs. 8-8.

This book is a new addition to the already large number of books on Obstetrics and Gynecology written with diverse scopes and objectives. The author writes in the preface that this book is intended to be "neither a textbook nor a reference book"; and that the object of this small handy, pocket size volume "is to present in the most concise form possible the essential features of obstetrics and diagnostic gynecology."

A perusal of the book shows that the author is justified in his modest claims, for the book presents valuable, correct and up-to-date informations in a way which is easily referred to and quickly grasped. The subjects have been dealt with in a concise, but not sketchy, manner. Intended as it is to be a handbook, "controversial matters" and "descriptions of surgical technics have been avoided" while the four pages inside the two covers have been packed with very valuable data concerning various normal measurements, etc. of every day necessity. The type is clear, easily readable and does not strain the eyes. The book should prove to be a dependable and useful handbook for general practitioners, who usually have not the time nor the opportunity for consulting standard books of reference. Get up and binding is good.

R. SINHA.

THE 1949 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY—Edited by J. P. GREENHILL; Pp. 629. Published by the Year Book Publishers, Inc.; 200, E. Illinois Street, Chicago-11, U.S.A. Price $4·50.

The present volume has adequately kept up the standard and tradition of its predecessors, and for this the editor, Dr. Greenhill, deserves congratulation. The book presents reviews of the literature on the subject in journals received from October, 1948 to August, 1949. It is hoped that the subsequent issues would cover a whole 12-month period. This Year Book, alone with its sister-volumes in other subjects has already earned a respectable place in the book shelf not only of the specialist, but also of the G.P. who does some amount of obstetric and gynæcology practice. The abstracts are liberally annotated with the editor's valuable comments backed by his wide experience, and this is an attraction which makes the Year Book a better and much more desirable volume than one containing the abstracts only. The "Quiz" of 20 assorted questions on the jacket of the volume serves to stimulate interest in the varied reading matter which is presented in well-arranged order. A larger proportion of abstracts from non-American journals would make the subsequent volumes much more interesting. The abstracts and editorial comments appear to be well-proportioned. It would be better if more (not longer) abstracts could be incorporated.

R. SINHA.

SPEECH AND VOICE CORRECTION—Edited by EMIL FROESCHELS, 1948. Double Crown, 16 vo., pp. 321. Published by Philosophical Library, Inc., New York.

Nineteen contributors have written for this volume. The subject is divided into 22 chapters and each chapter is written by an expert. The book will be useful to those "interested in speech and voice correction".

N. G. MOJUMDER.

DIAGNOSTIC TESTS FOR INFANTS AND CHILDREN: PRINCIPLES, CLINICAL, AND LABORATORY PROCEDURES, INTERPRETATION — By H. BEHRENDT, 1949, Pp. 546. Interscience Publishers, Ltd., London. Price $7·50.

This book came as a pleasant surprise to the reviewer, as he himself has already started collecting the diagnostic procedures required in day to day pediatric practice. This interscience book is of much ambitious nature than the one referred to. The whole book is divided into as many as sixteen sections covering Digestive functions, Liver function test, General metabolism test, Fat metabolism test, Protein metabolism test, Inorganic body constituents, Vitamin nutrition tests, Cardiovascular system, Immunologic tests, Renal function test, Nervous system, Psychological test, Test of hearing and sight, endocrine function test, Miscellaneous tests.

Each test is generally divided into two parts—procedure and interpretation, which makes the book more useful. The book is well-written, contains a good bibliography and will be useful to all those who deal with children.

The treatise, however, suffers from a few defects. Though psychological tests are labelled as "Tests", the reviewer thinks that these should be better "out" than "in" a treatise like the present volume, while though the examination of blood does not come under the general heading of "tests", can usefully be added in the next edition. The title then can be changed into "diagnostic procedures", if thought necessary.

N. G. MOJUMDER.

A YEAR WITH OSLER—By JOSEPH H. PRAT, 1949. Demy, 8 vo., pp. xxi plus 209. Published by the Johns Hopkins Press, Baltimore, Price $4·40.

Dr. Joseph H. Pratt was a medical student in 1896-97 when Dr. Osler had taught clinical medicine to undergraduate students at the Johns Hopkins and the present treatise is written from the notes carefully taken down by the author at that time.

We owe a deep debt of gratitude to Dr. Pratt for bringing out this work from which the physicians and students throughout the world will have a glimpse of the man and his methods of examination. They will note the humility of the teacher and his willingness even his eagerness to acknowledge his mistakes in diagnosis. Though the lectures were given fifty years ago they possess, as the author says, their original freshness in large measure and contain much of value to the physicians and students of to-day.

P. G.

CURRENT MEDICAL LITERATURE

Fits and Fainting

Symonds (*Lancet*, 1:257, 1950) at a meeting of the section of neurology of the Royal Society of Medicine said that the symptom common to fits and faints was loss of consciousness. He defined a fit as being a disorder of function which was in onset local in origin and therefore one would expect the symptoms to show variety depending on the part of the brain in which the impulse arose. There were many varieties of epileptic attack in which no local origin was apparent; the speed of discharge was so rapid that involvement at once became general. In a faint there seemed to be an order of susceptibility. The retina and areas concerned with postural equilibrium failed early. In a faint, if the onset of anoxæmia was not too abrupt, there was an order of loss of function which was characteristic: dimness of vision, loss of balance, unconsciousness. In certain cases, however, the loss of consciousness might be abrupt. Also it might be caused by emotion, and this might lead to confusion of a fit and a faint, which became even more likely where convulsive movement occurred in a faint. In a series of 362 cases of fainting, convulsions were noted in 7 per cent. When together with loss of consciousness there was loss of balance, it could be taken that the attack was a faint; if there was loss of consciousness without falling, it was a fit. Ventricular standstill might also cause convulsions if it persisted for 10-20 seconds. Postural hypotension, producing pallor, unconsciousness and falling, might also be confused with epilepsy. Discussing epileptic attacks originating in the visceral centres, he said that pallor, nausea and palpitation and dizziness might usher in a complete epileptic attack or be the only manifestations of it. Vasovagal attacks were, he believed, very rare, and they were not to be confused with cerebral anxiety states. Gowers applied the term for attacks originating in the medullary centres and associated with epigastric discomfort, respiratory distress, coldness, pallor, and a sense of impending death. Later Lewis used the term for fainting, but vasovagal attacks were not faints or fits, in ordinary sense, although they might be confused with them if seen separately. Fainting very rarely occurred except in the erect posture. If an attack took place after long standing or after emotional disturbance, it might be assumed to be a faint. But epileptic attacks might be due to a number of causes, of which emotion was one and the malaise preceding illness another. Sir Charles considered that urinary incontinence during unconsciousness was characteristic of epilepsy; though it might also occur with a faint if the bladder was over full, but not otherwise. A spell of yawning was often a precusor of an epileptic attack. He stressed that excessive liability to fainting in childhood might be followed by excessive liability to epilepsy later; and some people exchanged migraine for epilepsy. Anyone might have a fit or a faint for sufficient cause. Why should some have them for so little cause? In epileptics the nervous centres were unstable, but little was known of the actual "trigger" mechanism which started the attack. In a faint a fall in blood-pressure explained the symptoms and the "trigger" was probably in the central nervous system—the onset following emotional disturbance suggested this, and again the fainting after standing for a long period. In postural hypotension there was already a great deal of evidence pointing to a central "trigger" mechanism, probably in the hypothalamus. The common characteristic for faints and fits, therefore, was an unstable nervous system. Hence it was not surprising that one should find both occurring in the same person, and that as time went on the influence of the centre responsible for fainting became less and that for epilepsy became greater. Finally he pointed out that there was no absolute means of distinguishing a fit and a faint, unless the blood-pressure and pulse-rate could be watched during an attack. Although there might be a distinction between the two, they were related in their dependence on nervous instability.

Dr. Denis Williams began by quoting Gowers's description of fainting and remarked that to-day they were discussing the matter in the same way as 50 years ago—they are a little further on, perhaps, but not much. He agreed that vasovagal attacks were rare, and that they should not be confused with "faints". He had seen two cases in the past year, both of which had been due to an infiltrating lesion in the region of the third ventricle. The electro-encephalograms (E.E.G.) of both patients with fainting and those who had epileptic fits showed bursts of fast waves in the frontal lobes. Therefore it appeared that the two conditions had a common factor, although he would not say from it that fainting was epilepsy. It was most unlikely that these waves related to the circumstance giving rise to the fit or faint, or directly to the reflex instability of the cardiovascular system, but it was likely that they reflected some instability in the hemispheres. Faints and fits must not be confused in their pathology or aetiology, but they seemed to be linked by the failure of the hemispheres to maintain consciousness in a special situation.

Dr. Maurice Campbell thought the distinction between fainting and epilepsy a very real one. He considered it unfortunate that the same term, "syncope", was used for the loss of consciousness in fainting and for the loss of consciousness in death, and suggested the term *tachypsychia*, for use where there was sudden loss of consciousness in a faint, and *bradypsychia* where there was a more gradual loss of consciousness. While loss of consciousness in a sense concerned the physiologist and neurologist more than the cardiologist, Dr. Campbell thought they had a considerable knowledge of the many cardiac mechanisms which resulted in loss of consciousness. The common point in all the cases associated with cardiovascular lesions was cerebral anoxia. Too rapid functioning of the heart, as well as too slow, reduced the cerebral blood-flow. In general, bradypsychia carried the graver prognosis. The patient was often not able to tell whether his failure was cardiac or cerebral. Dr. Campbell thought it was sometimes impossible to make a diagnosis of this on a single attack. How often are conditions like cerebral tumour present with loss of consciousness, and no other cardiovascular signs. The duration of unconsciousness was a real help in differentiating a cerebral and cardiac attack. A short loss of consciousness, lasting 2 minutes or up to 5 minutes, might be due to either; one lasting over 5 minutes was not likely to be cardiac, for if the heart stopped for 5 minutes the patient was dead. A difficulty was that some attacks started with cardiac arrest, but when the heart started again, consciousness did not return, because anoxæmia had been produced for long enough to cause cerebral damage showing itself in long unconsciousness. Stokes-Adams attacks where there was ventricular standstill in one side of the heart were often in-

distinguishable from fits and were also a good imitation of *petit mal* and *grand mal*. Standstill of the heart for 5-10 seconds would cause a sudden loss of consciousness. He recalled some American experiments in which a sphygmomanometer cuff was put round the necks of students and blown up to obstruct the cerebral circulation. Consciousness was lost in 5-10 seconds and recovered in the same length of time as soon as the cuff was allowed to collapse. All the students recovered completely in 2 minutes. The experiments were repeated on some schizophrenic patients who were kept unconscious for 110 seconds. These too were said to have recovered completely. Referring to Dr. Williams's observations with the electro-encephalograph, Dr. Campbell agreed that persons who were subject to fainting and those who had fits seemed to be a special type, but he did not think the two conditions were clinically related.

Dr. M. N. Pal, speaking as a psychiatrist, stressed the dangers of mistakenly diagnosing epilepsy as hysterical fits. Of 100 patients referred to him from military hospitals as cases of hysterical fits, only 31 had given a normal E.E.G.; 18 had definite evidence of epilepsy; 28 gave the spike-and-wave pattern associated with petit mal, and reports on the remaining 23 stated either that the E.E.G. suggested a predisposition to epilepsy or that it was compatible with epilepsy.

Dr. W. Ritchie Russell thought it was simpler to think of all people as being epileptics and regard the matter as one of threshold. He considered that anyone who suffered from automatic behaviour after an attack had had a fit, and he made a plea that someone who had witnessed the attack should be sent with the patient to hospital. Forms should be posted to persons who had seen the attack. Patients who were liable to postural syncope should be told how they could stop an attack. There were various ways in which this could be done without drawing undue attention to oneself; the most effective was to bend down to tie up one's shoe-lace; or—if stooping was out of the question—to contract the abdominal muscles vigorously.

Prof. E. P. Sharpey-Schafer had found that one could faint anyone by bleeding him. If the person had a fall in blood-pressure which was great enough, he would inevitably have a fit. Professor Schafar did not think it was easy on the fit alone to distinguish between a fit and a faint. The pallor was a great interest. It had been shown that there was secretion of posterior pituitary hormone during the attack.

Dr. Sheila Sherlock said that not only had secretion of the posterior pituitary hormone been observed, but also secretion of adrenaline. It seemed this might be the effect of faints and not the cause. She wondered whether the abnormal rhythm which Dr. Williams observed in the E.E.G. was the result of the faint or whether it might be causative.

Dr. C. G. Baker discussed unconsciousness occurring with coughing. Such cases, he recalled, were first described in 1876, when they were termed "laryngeal vertigo". All these cases occurred in men who were overweight, suffering from chronic bronchitis and emphysema. Dr. Baker thought the coughing led to cerebral anæmia, the high intrathoracic pressure preventing the return of blood to the right heart, and that the condition was commoner in men than women because men coughed with more force and severity. The prognosis was good.

Sir Charles Symonds, replying to the discussion, welcomed Dr. Williams's new concept that some people are more liable to lose consciousness than others, whether from epilepsy or not.

Prognosis in Cerebral Haemorrhage

When a patient is examined shortly after a stroke it is usually difficult to assess either the immediate prognosis or the risk of further vascular accidents. Tennant and Harman (*Am. J. Med. Sci.*, **218**:361, 1949) have tried to analyse factors which may influence the prognosis by studying 107 patients with cerebral vascular accidents admitted to the Wisconsin General Hospital. There were 5 cases of cerebral embolism, which are not considered further, 27 of cerebral thrombosis, and 75 of hæmorrhage. In the differential diagnosis of thrombosis and hæmorrhage the criteria suggested by Aring and Merritt (*Arch. Int. Med.*, **56**:435, 1935) from a study of 245 fatal cases have been used, and though these are certainly not infallible they are a useful guide in differentiating the two conditions. The proportion of 75 cases of hæmorrhage to 27 of thrombosis is unusually high, probably because only the more serious cases were sent to hospital—22 of the 75 patients with hæmorrhage died but only 2 of the 27 with thrombosis.

Hæmorrhages from congenital aneurysms were excluded from the series, and only 12 of the patients considered had a hæmorrhage before the age of 40, the greatest number occurring during the sixth decade. The chance of a hæmorrhage proving fatal appeared to be greater if it occurred before 40 or after 60. In general, if the systolic blood-pressure was above 190 mm. Hg, the risk of death seemed to be increased. The depth of coma did not appear to bear much relation to the outcome of considerable importance; none of the patients who recovered were in coma for longer than two hours, while in the 22 fatal cases coma always lasted for several hours. Another prognostic sign was the occurrence of abnormal respiratory rhythm, particularly Cheyne-Stokes respiration. All except 6 of the fatal cases had long periods of altered respiration, while only transitory abnormalities occurred in the patients who recovered. The series was scarcely large enough for estimation of the eventual outcome in patients who survived the initial attacks, but 10 had a second cerebral hæmorrhage, 4 a third, and 1 a fourth. The morality of second attacks correspond to that of the first.

Rose (*Lancet*, **2**:561, 1948) studied the problem from a different angle by estimating the time between the onset of an attack and death in a series of 205 cases dying of cerebral hæmorrhage of Leeds General Infirmary. His series included 30 cases in hæmorrhage from intracranial aneurysms and no less than 27 cases of apparent cerebral thrombosis in which a secondary hæmorrhage occurred about a week after the initial attack, probably the result of alteration in the nutrition of an arterial wall in relation to the area of softening; this group is of particular importance when the use of anti-coagulants is considered in the presence of a cerebral thrombosis. No patient in this series with a primary hæmorrhage into the cerebral hemispheres survived for longer than four days.—*Lancet*, **2**:1045, 1949.

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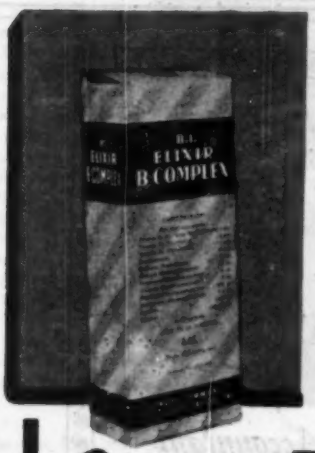

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SUPPLEMENT
Journal of the Indian Medical Association

VOL. XIX, No. 12 CALCUTTA SEPTEMBER, 1950

IX BENGAL PROVINCIAL MEDICAL CONFERENCE, RAJPUR—Presiding over the ninth conference of the medical profession of Bengal at Rajpur in 24 Parganas on 4th December, 1949, under the auspices of the Bengal Provincial Branch of Indian Medical Association Dr. A. D. Mukharji, President of the Branch for 1949-50 said:

I must express my gratefulness to those who have re-elected me for another term and I sincerely crave the indulgence and support during my term not only of those who supported my election but also of those who could not lend their help to my election. You have, I must confess, placed me in a rather embarrassing situation by inviting me to preside over this conference which is held in the district where I was born and which is the field of my social and political activities. The site you have selected is familiar and inspiring to me as this locality gave me the association of noted revolutionaries during my early life, in our humble attempts to get the Britishers out of our land and I faced incarceration with most of them during the first World War and after its termination under the leadership of Mahatma Gandhi and Deshbandhu Chittaranjan Das joined the Indian National Congress and gave up the cult of hatred and violence and then also my local friends of revolutionary days were with me in the Congress. Thus I claim myself to be one of this locality and I believe my shortcomings will be overlooked by the Reception Committee.

DR. A. D. MUKHARJI,
President, Bengal Provincial Medical Conference, Rajpur

I must confess that I do not possess the qualities of those eminent leaders of our profession who have added grace and dignity to this office in the past but I can assure you that I will try to emulate their examples and do my best to uphold the dignity of my profession and serve it with all the resources at my command and with the mature guidance from the representatives of the branches of our Association.

I have to congratulate the Baruipur-Rajpur Branch for undertaking the responsibility of inviting two of the nine provincial conferences that have been held so far.

While focussing your attention to the very many problems that confront us the first that can draw the same is the growing unemployment amongst the profession as an aftermath of the last World War and the uprooting of thousands of our brethren in the profession from their field of activities due to the evils of partition of the province. The present unsettled state of affairs in the field of business has added to the economic instability of our profession.

There are some lucky amongst us who due to financial solvency could get the best professional education in this country and abroad and being placed in charge of teaching hospitals have stabilised themselves not only in the profession but in the society as well.

There is another class who also being gifted with local and foreign education are employed as honorary officers of the same hospitals where our lucky brethren have strived successfully and are displaying a glaring disparity and in their performances and complicating matters and helping the development of dual system in the selfsame institution not at all conducive to the development of the profession or of the institutes.

Young medicos having qualified used to be employed in responsible but honorary posts to man the public hospitals so long but thanks to the agitation of these young doctors they are now enjoying the bare necessaries of life.

There is another class of doctors who due to the munificence of their guardians, mainly to enjoy the bliss of city life have opened out clinics and dispensaries in big cities and are supplying advice gratis to the laity and comforting themselves as having rendered service to humanity.

There is another class of doctors who have been placed in charge of Muncipal, District and Union Board Charitable Dispensaries and are paid money in the name of salary which is far less than a common illiterate labourer and are enjoying lives not at all very encouraging.

There is another class of our profession who mostly due

to pecuniary difficulties have migrated and settled in the villages and are leading lives of humility to serve the vast multitude of our own kith and kin under very trying circumstances. These are the pioneers who have disseminated scientific knowledge in medicine in the remote countryside without State or philanthropic aid but according to the dictates of their own conscience.

There are several hundreds of our friends working in Railways and Factories. Under the provincial Government there are say about 500 doctors and there are some more in temporary services. The rest are all in private practice.

There are about 12 thousand qualified doctors in West Bengal for a population of 2 crores and a half. In 93 towns, about 90 lakhs and in 34,249 villages, about one crore and 60 thousand people live. The ratio of doctors to population comes out at one doctor for about 2000 people in West Bengal. This is not so bad as people generally assert. Moreover due to 80 per cent of our people being illiterate and poor they could not be attracted so much towards scientific medicine resulting in persons of various questionable faiths and superstitious practices finding a vast field for exploiting the people in the name of rendering medical relief. The rapidly growing menace of quackery, in the scientific system, advocates of which number nearly ten thousand, has further complicated matters.

Thus it is not sound to discuss about the disproportion of qualified doctors to the population. Unless the people are educated enough to get attracted towards the scientific system of medicine, it would be difficult for the profession to establish themselves in the rural areas as advocates of scientific medicine. Preventable diseases, Tuberculosis and Venereal Diseases are on the increase in the rural areas but due to the abject poverty of the masses it is difficult, if not impossible, to eke out a living by practising amongst these people.

Due to absolute lack of communications in rural areas where in an area of 28215 sq. miles, there are only 2462 miles of good metalled roads, 8652 miles of Kutcha roads and village path ways of 13104 miles, most of the villages are not accessible by vehicles during rainy season. Villages even at a distance of 8 or 10 miles from Calcutta cannot be reached. Thus even if qualified medical men trained in scientific methods are stationed nearby, their services can hardly be utilised by the people at large. Although the nation is supposed to live in the villages where diseases are much more rampant and where food and raw materials are produced, people are neglected very badly inspite of the fact that in the past villages were the real centres of culture and happiness.

Unless communications are improved, dying and dead rivers are resuscitated, water supply improved, education is extended and the economic prosperity of the people is raised, mere production of a large number of qualified doctors will not solve the problem. The question of providing medical relief must not be the concern of the profession or of the people but it must devolve upon the State to provide this for all and sundry and for this a comprehensive National Health Scheme is immediately called for. This will absorb all the available medical personnel. In the evolvement of any such scheme I can assure the whole-hearted co-operation of the medical profession.

The Rural Health Scheme adopted by the Government of West Bengal envisages the creation gradually of 2053 rural and 270 thana centres but could not develop as per anticipations of all. Up-to-date, only 2 thana and 16 rural health centres have started functioning and some 25 more may start this year. This also is likely to be handicapped due to the financial conditions of central and provincial governments. The scheme of having only one doctor for each rural centre, on Rs. 150/- only p.m. without the right of private practice, should be revised to Rs. 250/- with scope of increment. The Government should mobilise the services of as many of the present doctors as possible and should post them in rural areas in such a manner that those who will be placed in more remote areas will get more pay than those who are posted in cities or their neighbourhood. The Government should also take charge of the education of the children of these medical officers.

The Thana Health Centre scheme evolved due to agitation of Deshbandhu Chittaranjan now in operation should be thoroughly re-cast and the dual control of District Board and Government should cease. I believe that any expense on public health aimed at enforcing positive health of the people will be amply repaid by better out-turn of work and production of more food etc. What it is needed is that the nation must be lifted up from the morass it has been plunged in.

The Province has 5650 permanent hospital beds and 10,150 A.G. hospital beds making a total of 15,800 beds. According to the standard laid down by the Bhore Committee, the province will need 1 lakh and 20 thousand beds.

Out of 27 crores of rupees as the province's income, about two crores are provided for public health and medical relief but a large part of this remains unspent during the year and a sum of rupees one crore and 25 lakhs are spent on this head, whereas the Police Department takes 3 crores of rupees and general administration 1 crore and a half.

A large slice of money spent under Medical and Public Health is utilised to meet the high cost of maintaining the top heavy supervising staff. Those who really work amongst the masses and come in their direct contact and serve them do not get anything but adversity of various kinds.

To lift the people from the present state of ill-health more money is needed and this can only be secured by taxation. People generally resent direct taxation. I would therefore suggest indirect taxation on the rich by charging for half the beds in all existing and new hospitals and making the remaining free for the poor. The system of paying charges at the out-patient department should also be introduced for the privileged class of society many of whom I have seen attending our out-door departments in luxurious motor cars. By capital outlay, if hospitals and treatment centres can be opened out, considerable part of their maintenance cost can be met from these sources.

The Government have imposed taxes on all who enter Calcutta by Railways to meet the cost of Howrah Bridge I wonder why such taxes could not be imposed to ensure positive health of our people.

I must congratulate the Government and Hon'ble Dr. B. C. Roy for doing away with medical schools from the province.

There is enough room for reforms in medical education. There should be closer contact between teachers and the taught. Conditions of living of the students should be improved and they should be encouraged to undertake more practical work. I suggest that every medical student should stay in rural areas for at least three months under their teachers to see conditions that obtain there and try to adapt them as the methods of treatment in Lospitals and big cities have got to be adjusted in the rural areas under circumstances not very congenial. The teachers should devote more of their time and opportunities for research in medicine. For this, of course, teachers with high academic distinctions and who have keen insight for teaching should only be selected on adequate salaries. Otherwise, I am afraid due to official position in the teaching hospitals they will develop lucrative practice neglecting teaching and research work and it would naturally be difficult to keep up the standard of teaching. In this connection I must condemn the employment of honorary staff in all public hospitals which is a kind of exploitation which must now be stopped. I would welcome the honorary services of those fortunate and well placed of our members who have made up their pile and superannuated for certain hours in these hospitals but under no circumstances must the budding young members of the profession be exploited or too large number of beds allotted to a single officer.

For better system of imparting education the Bengal Provincial Branch of our Association has evolved a scheme. I draw your attention to the same. The attention of our local Government, University and the educational institutions is also drawn to the same.

The Condensed M.B. Course facilities for Licentiates must continue and I suggest a separate Medical College exclusively for them. In the event of the Lake Medical College ceasing to exist, the Presidency General Hospital should be remodelled and expanded to serve as a Medical College for this purpose and this may in the future be utilised for Post-Graduate Medical Studies. It is unfortunate that this year 100 students that used to be admitted to this course at Medical College is going to be discontinued, without providing alternate arrangements. This move will deprive a large number of aspiring licentiates to get advantage of this course as already demand for their training has become very great and about 400 students are refused admission every six months.

Post-graduate medical education should be introduced in our country without further delay as I believe men and materials are not wanting in ushering in a scheme of this nature. If this could be effected every year we could save the drainage of lakhs of rupees to foreign countries. We are now agreeable and we must not look to the west for all our enlivenment and unless we move for self determination in educational matters we will lose whatever little heritage we have of our glorious past. In this connection I would urge change in the angle of vision of Government and other employers who pay high premium to foreign qualifications. It has been noticed many of the most mediocre students with their fathers' or father-in-laws' money go to foreign lands and after a number of failures return with some diploma but on arrival are given preference over many brilliant candidates who due to financial difficulties could not go abroad. Due to this kind of invidious distinction many of our young doctors prefer to go abroad enamoured of their future possibilities. Our country offers vast field for tropical medicine but we have noticed many of our youths go to Manchester, Liverpool and London for Diplomas in Tropical Medicine. Arrangements should be so that teachers and students of the West would come to India to learn about tropical diseases and our professors and students should go to those countries to learn those branches of science which are not taught here. Teachers must be encouraged to visit foreign countries at regular intervals not to get degrees or diplomas but to learn conditions that obtain for imparting education therein. Unless these are done I do not think the present apathy and neglect towards the education available in our country will disappear. By the joint efforts of the University and Government post-graduate education of higher order can be introduced in this country as men and materials for this are not lacking here.

In the field of research we could not achieve much and this does not add to our tradition. If a portion of the money and respect which our professional leaders have earned could be achieved in the field of research our achievement would have been of a far reaching character. In this the foreign rulers did persistently deprive us from real opportunities for undertaking research, still some of us with many handicaps have contributed original work for which we can take legitimate pride. I hope with the transfer of power to our own leaders, the angle of vision will be changed and the facilities for research which were denied to us will be allowed and our brethren will be able to carry on successful research to bring out armaments to fight out diseases to save our fellow men from the onslaught of diseases.

With the cessation of foreign domination the coveted posts held by that Heavenborn service, I.M.S., have gone to those who belong to Provincial Medical Service (upper) but except one no other member of the same service (lower) has been able or allowed to work in the upper service. Thus the old pernicious system of compartmentalism still reigns supreme in the medical administration of the province. Even meritorious members of the lower service do not find scope for promotion to the upper service. Some of the provinces have combined both the provincial services into one and done away with caste system in it. During the term of 10 years *i.e.*, from the beginning of the last War many posts are held by officers recruited temporarily and these posts have not as yet been filled up permanently and those that are at work feel shaky about their future. Many superior posts have been filled up temporarily after 15th August, 1947 but no steps have been taken to fill them up permanently. It is said that Government have carried on systematic investigation during the last two years to determine the number that will be needed for the medical department but its reports are kept in the cold storage of the Secretariat probably to be consecrated by white ants. This hardly reflects credit to our administration.

I feel that the Government service should consist of Administrative, Teaching and general. The first two branches should be whole time and carry decent salaries. The various compartments in the general medical services should be abolished as its repercussions are felt outside.

When we are discussing about the problems of raising the standard of professional education, our national government in the centre and provinces, in the name of nationalism and love for the poor masses are out to encourage by State

aid and recognition to Homœopathic and Ayurvedic systems and efforts are on foot to synthetise our scientific system with the indigenous systems. Medical science, to my mind, can only stand of scientific research and this ideal must not be allowed to be sacrificed at the altar of cheap popularity and nationalism. Ayurveda certainly had its glorious past but due to sheer neglect and want of research it is lying in a moribund condition, since the last 700 years resulting in the training more of our scientific medicine than real Ayurveda in the Ayurvedic Medical Colleges that exist in our province. Attempts for definite inroads in our spheres by the advocates of these systems and quacks and charlatans are in evidence as public are seen to lend their support to them. I shall be happy to see Ayurveda or any other system developing their field of research and standing side by side with our system but these must be based on science alone. I do not support the sympathy which some of our leaders and ministers in some provinces are lending to these systems. I do not object to this if given individually but if extended as a State patronage I have definite objections.

Another serious problem has recently developed in trying to recognise the hitherto quacks as fully qualified registered practitioners. I have noted with pain that some of our leaders and journalists are championing the cases of these persons with questionable training. May I enquire of these leaders if they are willing to entrust themselves or their relations when they fall ill to the care of these quacks? I think not. Then why is this desire to earn cheap popularity at somebody else's cost and misery?

On the whole, I feel that in the changed conditions of our country the scientific system of medicine which has developed so well in this country in competition with the rest of the world is going to be side-tracked.

The craze for import of foreign medicines has not abated as yet. This is a pity. I feel that unless we are self-sufficient for our needs in respect of drugs, instruments and appliances and food materials, we will have to drain away our national wealth to foreign countries much to our discomfiture. I would therefore urge upon indigenous manufacturers to devote their energies to produce quality drugs and come in contact with doctors who should also use these drugs in preference to foreign goods if these are based on standardised quality.

Our Government should in this connection rigidly enforce the provisions of Drugs Act and see that all drugs, indigenous or imported, conform to the standard before these are let loose for general use. The manufacture of drug, I believe, will not escape the attention of our popular Government any longer.

I urge upon the amendment of Provincial Medical Act for introduction of joint electorate in the election, reduction of nominations and election of the President. I appeal to the profession to unite under the Indian Medical Association which is not only the national organisation of ours but also is an integral part of World Medical Association to-day and has a very bright future.

In this connection it is much to be regretted that our Government have not yet changed their outlook to consult the Association in matters of medical and public health. I am sure if they do so there will be no occasion to regret the same. We from our Association had to fight the foreigners who ruled this country but now as our own leaders are at the helm of our Government I do not think it is too much to expect the co-operation of Government in our attempts to serve the profession and through them the suffering humanity. We have in our province at the head of Government one of the ex-Presidents of our Association, can we not expect that he will be able to take the Association, to earn status for which, his contributions were no less, in confidence in shaping the medical and public health policy for the province? I do not seek any favour but I think on behalf of you all I can assert our right to have this little courtesy of recognition.

Dr. Mukharji appealed for funds for a building of the Association and for helping the families of deceased and afflicted medical men and women. He also appealed to the Government and leaders of public opinion to take the profession in confidence while evolving schemes of public health and medical relief and urged the creation of an Advisory Committee for this, with representatives of the Government and the profession, to advise the Government from time to time. He also urged the creation of a separate Ministry of Health instead of attaching the department to other departments which are thought to be more important. He appealed to the profession to take more active interest in local bodies and legislatures to safeguard not only their own interest but to help the people by having health plans through these bodies and take a legitimate share in shaping the destinies of the nation. He also appealed to all for keeping vigil on all anti-social agencies and keep up the lofty ideal of service to the suffering and set better ideals for others to emulate to serve the afflicted whether in distress or in plenty.

* * * *

Resolutions passed at the 9th Bengal Provincial Medical Conference held at Rajpur (24 Parganas, West Bengal) on 4th December, 1949 with Dr. A. D. Mukharji in the chair:—

1. *Health Budget of the Government*—In view of the appalling health conditions of the people of West Bengal, this Conference demands that 25 per cent of the total revenue of the province be devoted for health expenditure.

2. *National Health Service*—This conference is of considered opinion that the State must assume responsibility for the protection of health of the people.

This conference is further of opinion that the Government of West Bengal should take necessary steps for establishing a comprehensive National Health Service so that all sections of people in West Bengal including industrial, agricultural and other workers, irrespective of social and economic inequalities, may have equal opportunities to benefit from medical and allied services.

This conference further demands that the details of the health scheme should be worked out, in consultation with the Bengal Provincial Branch of the Indian Medical Association.

3. *Rural Health Scheme*—(*a*) This conference views with concern that the Rural Health Scheme sponsored by the Government of West Bengal in 1947-48 and 1948-49 did not materialise, due to lack of real drive on the part of Government and regrets that rural health is being allowed to suffer. This conference demands that in the interests of the poor and sick rural population of the province, the 'Rural Health Scheme' of the Government of West Bengal must not be shelved on financial or any other grounds.

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(*b*) This conference is of opinion that for successful working of the Rural Health Scheme it is essential to employ at least two qualified medical officers, on adequate remuneration, in each rural centre, and to provide for better rural communications by improving the existing rural roads and constructing new ones where necessary, so that a Rural Ambulance service might function properly.

(*c*) This conference is further of opinion that there is enough room for improvement in the present Rural Health Scheme and urges upon the Government to consult the I.M.A., Bengal Provincial Branch in modifying the scheme.

4. *Food Problem*—(*a*) This conference draws the immediate attention of the Government to malnutrition rapidly growing amongst the people of West Bengal due to high price of foodstuffs, specially of milk and fish.

(*b*) This conference urges upon the Government of West Bengal to start rationing of milk and sugar immediately, throughout the province, for the benefit of the children, the expectant and nursing mothers and the sick, and at prices within the reach of the people.

(*c*) This conference further requests the Government to take short-term measures for the development of fisheries so that fish may be available in sufficient quantities and at prices within the reach of the poor, at an early date.

(*d*) This conference is of considered opinion that agriculture should be planned on scientific lines and necessary facilities should be given to agriculturists in order to make this province self-sufficient in the production of food crops.

5. *School Hygiene*—In view of the gradual deterioration of the health of the school-going children in this province, this conference is of opinion that necessary steps be taken by the Government of West Bengal to introduce a system of compulsory provision of tiffin in all schools and to arrange for a regular and periodical medical examination of the students.

6. *Control and Treatment of Leprosy*—This conference learns with great satisfaction the establishment of a Leprosy Hospital at Bankura by the Government of West Bengal with 100 beds at present and with a provision for gradually enlarging the number of beds to 500.

This conference, however, views with grave concern the decision of the Government of West Bengal to curtail the number of beds in the Albert Victor Leprosy Hospital at Gobra. There was a provision of 200 beds in this hospital for 30,000 leprosy cases in and around Calcutta of which approximately 25% are infectious. As there is no provision for treatment of people afflicted with leprosy and suffering from other ailments in any other hospital in the city even a provision of 200 beds is too inadequate. This conference therefore urges upon the Government of West Bengal—

(*i*) to restore immediately the number of original beds in the Albert Victor Hospital with adequate financial grant;

(*ii*) to make adequate arrangements in the said hospital for surgical medical, gynaecological and other specialist treatment necessary for the various ailments of people afflicted with leprosy;

(*iii*) to start a separate leprosy home for incurable leprosy cases in the neighbourhood of the city of Calcutta.

7. *Import and Control of Essential Drugs*—In view of the fact that the medical profession of the province has still to depend on foreign countries for supply of many essential drugs and in view of the recent import crisis precipitated by the Foreign Currency Policy of the Government of India and also because the meagre amount of very essential and specific drugs available in the market immediately go into the hands of the unscrupulous black-marketeers, for want of efficient and effective control of distribution, the present policy of the Government of India of allowing fairly liberal import of non-essential luxury goods, automobiles, and proprietary medicines should be revised forthwith. This conference therefore suggests the following procedures to be followed, with respect to the manufacture, import, supply and effective distribution of drugs in the country:—

(*i*) to develop Indian drug industry on properly planned and scientific lines, through the joint efforts of the Government, industrialists and pharmaceutical concerns, so that India may be self-sufficient in essential drugs made available at prices, commensurate with the purchasing capacity of the people;

(*ii*) to implement the Drug and Pharmacy Acts immediately, so that the medical profession can be sure of the genuineness and standard quality of medicinal products, both indigenous and imported.

(*iii*) to arrange for import, in sufficient quantities, preferably in bulk, under an Open General Licence, of all drugs of an essential character, not manufactured in India, and made available to the public at controlled rates.

(*iv*) to make available sufficient distribution of foreign exchange for essential drug import, by prohibiting import of luxury goods and proprietary medicines;

Further resolved that as a short-term measure, drugs such as Chloromycetin and Aureomycin which are in short supply should be available to patients on the same lines as done at present for the ditsribution of Streptomycin.

This conference also recommends that to give effect to the aforesaid suggestions, a Drug Import and Supply Advisory Board be constituted with representatives of the I.M.A. at the centre, as well as in the province.

8. *Excise Duties on Spirits etc.*—The conference enters its emphatic protest against the imposition of iniquitous Excise Duties on Spirits, Tincture and other spirituous preparations as prevailing in West Bengal, in comparison with those of other provinces and urges upon the Government to make the rates uniform in all the provinces.

9. *Abolition of quackery*—In order to prevent quackery in any system of medical practice in this province, in the interest of the health of the people, this conference urges on the Government of West Bengal to pass a comprehensive Act, at an early date, to prevent any person from practising any system of medicine, unless he possesses the requisite qualifications in that system of medicine recognised by the Government, and is registered in the Provincial Register or Registers and to make it penal for unqualified or unregistered practitioners to practise medicine.

10. *Control of Registration by Medical Council*—This conference demands that in the best interests of the health of the people, the Government of West Bengal must see that

persons who are not trained in modern scientific medicine in accordance with the regulations laid down by the Medical Council of India or the State Medical Faculty of West Bengal, are debarred from registering themselves as duly qualified registered medical practitioners under the Bengal Medical Act 1914.

11. *Advisory Boards for Hospital*—This conference views with grave concern the present unsatisfactory state of the administration and equipment in the different hospitals of the province, both government and non-government, and urges on the authorities concerned to reorganise the working and administration of these hospitals by setting up of Advisory Boards consisting of officials and non-officials with adequate representation of the Indian Medical Association.

12. *Medical Education*—(*a*) In order to improve the standard of medical education in the province of West Bengal, this conference is of the considered opinion that the scheme of medical education prepared by the Indian Medical Association, Bengal Provincial Branch, should be accepted and implemented by the Government of West Bengal and the University of Calcutta.

(*b*) Further resolved that, for the present, for every department of each medical college in this province, at least one whole-time Professor or Associate Professor or Reader must be appointed an remunerations suggested by the I.M.A.

(*c*) Further resolved that the honorary visiting officers of hospitals attached to teaching medical institutions be given adequate conveyance and teaching allowances for their services, until it becomes possible to abolish the honorary system altogether.

13. *Up-grading of Medical Colleges*—In view of the fact that most of the Medical Colleges in West Bengal are inadequately equipped and under-staffed and that satisfactory teaching arrangements in terms of modern objectives are lacking in them, be it resolved that the Government be urged to subsidise with a view to upgrade all such institutions to a satisfactory level, at an early date.

14. *Double shift system in Medical Colleges*—This conference views with great concern the present attitude of the authorities in introducing double shift system in certain Medical Colleges without making adequate extra arrangements for the same. It therefore recommends immediate stoppage of such practice till the implementations of the requisites are made in those Institutions where the above system is in force.

15. *Condensed M.B.B.S. Course & Lake Medical College*—This conference recommends to the Government that arrangements be made on a long-term basis, for the training of medical licentiates for condensed M.B.B.S. course. This would not only enable the medical licentiates to obtain better medical training but also would, in the long run, benefit the common people in rural as well as urban areas, whom these licentiate doctors are serving.

Experience having shewn that the existing system of training the "Undergraduate" and the "Condensed" medical course students in the same medical college is detrimental to the interests of both these types of students, a separate medical college like the Lake Medical College should be run in Calcutta, for at least a period of 15 years more, in order to afford facilities to the civilian medical licentiates for obtaining the requisite training for condensed M.B.B.S. course.

This conference is, therefore, of the considered opinion that the *Government of India should not close down the Lake Medical College & Hospital in 1952 as contemplated by them.* The continuance of this college and hospital will also serve the need for a modern large hospital in South Calcutta which is so essential in this over-populated cosmopolitan city which is inhabited by several lacs of refugees from Pakistan and is expanding mainly towards the south.

This conference recalls, in this connection, the verbal assurance of Honourable Rajkumari Amrit Kaur, Health Minister of the Government of India, when she delivered the following speech during the closing ceremony of the Silver Jubilee Session of the All-India Medical Conference held at Calcutta in December, 1948:—

"The Lake Medical College which was until recently admitting only ex-service licentiates has now been thrown open to civilian licentiates as well. We have already admitted 14 of the latter for the current course and as the number of ex-service licentiates is expected to decrease, it will be possible to admit more and more civilian licentiates in this college."

16. *Post-graduate Medical Education*—This conference views with grave concern that the scheme of opening of a Post-Graduate School of Medicine in 1949 has not yet materialised, inspite of the assurance given by the Calcutta University and urges upon the University to immediately establish the said school under its control.

17. *University status of M.B.B.S.*—This conference urges upon the University of Calcutta to treat M.B.B.S. degree of Calcutta at par with M.Sc. degree in matters of admitting to D.Phil., Ph.D., and D.Sc. degrees of the University after submission of a proper thesis for the purpose.

18. *Foreign Medical Qualifications*—This conference expresses its concern at the growing tendency on the part of the appointing authorities to mete out preferential treatment to holders of foreign qualifications, with lesser practical experience, in filling up vacancies, ignoring the claims of competent senior and much experienced members of the profession or service with similar Indian qualifications.

This conference feels that such preferential treatment is inimical to the growth of the spirit of research and enterprise and therefore urges upon the authorities concerned to revise their policies immediately and do away with such practices.

19. *Post-graduate Diplomas for Medical Licentiates*—This conference is of opinion that necessary facilities should be given to the medical licentiates experienced in particular specialities to take up post-graduate diploma courses in these specialities, without going through the condensed M.B.B.S. Course.

20. *Reduction of Tuition Fees for Condensed M.B.B.S. Course*—This Conference requests the authorities of the medical colleges concerned to reduce the exhorbitant tuition fees charged for the Condensed M.B.B.S. courses, in order to enable all sections of medical licentiates to take advantage of the facility of this training.

21. *Salary of Medical & Health Officers*—This conference draws the attention of the West Bengal Government to the various anomalies in the existing cadres of the Medical and Health Services under State control and to the utterly inadequate present scales of pay which require immediate revision. This conference therefore demands that the different cadres of all Provincial Medical Services be reorganised in consultation with the Bengal Provincial Branch of the I.M.A. and remunerations made commensurate with the status, arduous conditions of living and responsibility of the medical men.

22. *Medical Certificates*—This conference learns with regret that the authorities of Government Ordnance Factories, Railways, and some industrial and commercial concerns do not accept medical certificates issued by private medical practitioners and urges the Government and these concerns to accept such certificates when issued by registered medical practitioners.

23. *Benevolent Fund*—This conference feels that to help the distressed families of dead and disabled members of the I.M.A., a Benevolent Fund should be created, and the Bengal Provincial Council of the I.M.A be requested to devise ways and means for the same.

24. *Petrol rationing for doctors*—This conference requests the Government of West Bengal to restore the cut in the supply of petrol to medical men, in view of essential services they have to render.

25. *Acknowledgments*—This conference records its gratefulness and expresses its sincere thanks to—

(*i*) Dr. B. C. Roy for kindly sparing his valuable time to inaugurate the 9th session of the Bengal Provincial Medical Conference at Rajpur.

(*ii*) The President, Dr. A. D. Mukharji, for his kindly presiding over the conference and very ably conducting its deliberations.

(*iii*) The Baruipur-Rajpur Branch of the I.M.A. for inviting the conference and for the excellent arrangements and entertainments made by the Reception Committee.

(*iv*) Proprietors of the Annapurna Cinema, Rajpur, for kindly lending the use of the hall for holding the conference.

(*v*) The delegates from different branches for joining the conference and making it a success.

(*vi*) East Indian Railway authorities for kindly offering facilities for the transport of delegates, members and visitors from and to Calcutta.

(*vii*) The present and past office-bearers of the Bengal Provincial Branch of the I.M.A. for their ungrudging services.

(*viii*) The Chairman and the Commissioners of the Rajpur Municipality for their hospitality, to the Press Trust of India, the All-India Radio and the individual newspapers, for their valuable assistance.

XIX EAST PUNJAB MEDICAL CONFERENCE—Resolutions passed in the 19th East Punjab Medical Conference held at Patiala on 17th and 18th December, 1949:

1. The conference places on record its sense of grief on the sad demise of Dr. Uan Ram Mohindra, (*2*) Dr. Jai Gopal of Ambala City and offers its heartfelt sympathies to the members of the bereaved family.

2. This conference requests the East Punjab Government to place a bill before the Legislative Assembly to so amend the Indian Medical Degree Act of 1916 as to forbid the use of title "DOCTOR" by medical men other than those trained in the Modern Scientific System of Medicine or those on whom the degree of Doctorate has been conferred by a University recognised by the Government and further stresses on the Government that the practitioners in other systems of medicine be made to write as Registered Ayurvaid or Registered Hakim or Registered Homœopath and not allowed to use the word Registered Medical Practitioner.

3. This conference re-iterates its resolution adopted by the Annual conference held at Ferozepore in 1948 on the subject of Malnutrition.

4. Resolved that the East Punjab Government, Pepsu and Himachal Governments be requested that the displaced doctors, previously employed by the various local Bodies in Pakistan be given the scale of pay as admissible to them according to the length of service under the revised scales of pay as granted by the East Punjab Government for the displaced employees.

5. Resolved that the facilities for the condensed M.B.B.S. course for the L.S.M.F. doctors be provided at the Amritsar Medical College as is being done for the L.M.S. doctors. East Punjab Government is further requested to have the existing Medical Schools up-graded to Degree College. It is further resolved that the Government of India be requested not to close the Lake Medical College as contemplated.

6. Resolved that this Conference strongly urges upon the East Punjab and Pepsu Government to provide facilities for the return and rehabilitation of the displaced doctors who on partition were forced to migrate to places outside the Province.

7. This conference deplores the fact that the East Punjab Government has practically taken no action on the Ferozepore Conference Resolution pertaining to Environmental Hygine and requests the Government to appoint a committee to go into the working of the Public Health Section of the East Punjab Municipal Act and East Punjab Pure Food Act to find out the shortcomings and the difficulties encountered by the Public Health Department in enforcing them and it requests the East Punjab Government to give adequate representation to the Indian Medical Association on this committee.

8. This conference expresses surprise at the decision of the East Punjab Government to shelve the scheme for the Rehabilitation of the displaced doctors in rural areas, which was circulated for opinion some time ago. The scheme was

one of the best means of rehabilitating a large body of such personnel as also of providing the much needed Medical Relief in rural areas. In view of the above this conference urges the Government to implement that scheme as early as possible.

9. This conference approves the resolution submitted to the Central Office by the Provincial Council East Punjab, I.M.A., incorporating amendments to the Medical Council of India Act 1933.

10. Whereas the present financial stringency precludes the possibility of opening more colleges to meet the acute paucity of Medical Men in the Country this Conference suggests to the Government to run Amritsar Medical College in two shifts. It further suggests that the course of academic study be suitably shortened by one year.

11. Whereas up-to-date knowledge of the Modern Scientific System of Medicine is indispensable for the proper use of Antibiotics Sulpha Drugs and other Drugs prepared according to B.P. and whereas Vaids and Hakims do not possess such knowledge, this Conference protests against the recent enactment by the East Punjab Legislative Assembly granting permission to Vaids and Hakims to prescribe these drugs and urges the Government to make the necessary amendment to the Act as soon as possible.

12. This Conference learns with satisfaction that the Pepsu Government has revised the scale of pay of the Assistant Surgeons Class II in conformity with those serving under the East Punjab Government but it regrets to find that the pay of the individual doctor has not been fixed according to the scale. This conference, therefore, requests the Pepsu Government to implement the said scale accordingly with a view to safeguard the right of the individual.

13. Resolved that one register for Election to the East Punjab Medical Council be maintained for all Registered Medical Practitioners and the class distinction among them be done away with.

14. Whereas the Medical Council of India has made a differentiation between F.Sc. and non-F.Sc. (Medical) L.M.S. diploma holders by its refusal to accord recognition to the latter, this conference requests the Medical Council of India and urges it to remove this invidious distinctions.

15. Resolved that in view of paucity of Doctors and facilities available at Patiala for the purpose, the Pepsu Government be requested to open a Medical College at the earliest.

16. Resolved that the Rural Medical Officers serving under the different Local Bodies under the East Punjab be given the same scale of pay and allowances as is being given to the Government Medical Officers of the same status in the East Punjab Government, if not more.

17. The Conference places on record its deep sense of gratitude to the Hon'ble Sardar Gian Singh Barewala, Premier, Pepsu Government, for the honour he gave us in inaugurating the Conference.

18. Thanks to Dr. R. P. Hari Dass for presiding over Scientific Session. Thanks to the members of the Reception Committee.

Appeal to the Members of the I.M.A. from the Members of the Reception Committee 27th All-India Medical Conference, Sholapur.

The 27th All-India Medical Conference, under the auspices of the Indian Medical Association, is to be held at Sholapur in the last week of December 1950, when a series of papers will be read on different subjects.

We invite you to attend the Conference in large number and contribute to the Scientific Session either by reading a paper on some subject of your choice and/or by taking part in the discussions.

We propose to choose two subjects from the Surgical, two from the Medical and two from the Gynaecological and Obstetrical branches as long papers, to be followed by discussion on them and also several short papers each lasting for fifteen minutes only.

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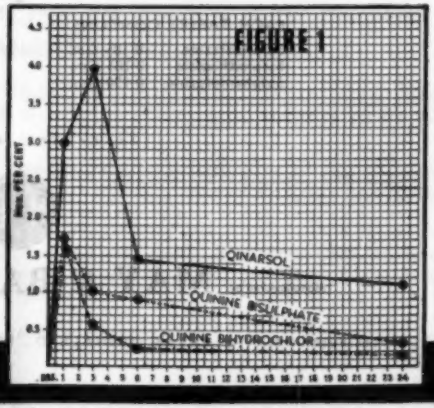

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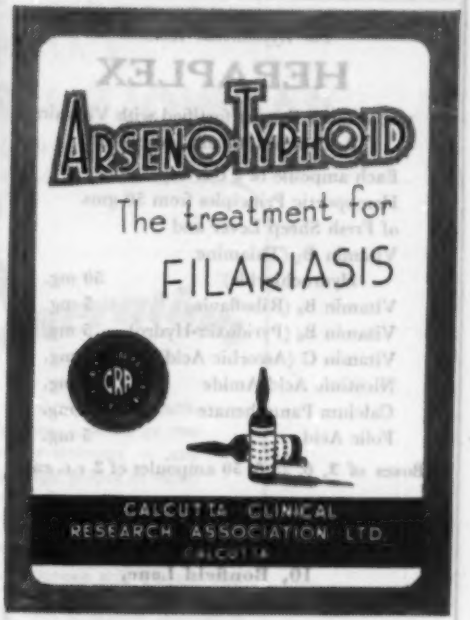

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